DVD Player

DVP5160, DVP5166K, DVP5168K

Service

Service

Service

DVP5160/12
DVP5160/05
DVP5166K/56/98/61
DVP5168K/51

Service Manual

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Published by KC-ET0742 Service Audio Printed in The Netherlands Subject to modification

Version 1.0

CLASS 1 LASER PRODUCT

GB 3139 785 32600

PHILIPS

Technical Specifications

TV standard (PAL/50Hz) (NTSC/60Hz)

Number of lines	625	525
Playback	Multi standard	(PAL/NTSC)

Video performance

Video DAC	12 bit, 108MHz
YPbPr	0.7Vpp ---- 75 ohm
Video output	1Vpp ----- 75 ohm
RGB（SCART）	0.7Vpp ---- 75 ohm (For Europe version)

Video format

Digital Compression	MPEG 2 for DVD,SVCD MPEG 1 for VCD DivX®	
DVD	**50Hz**	**60Hz**
Horiz resolution	720 pixels	720 pixels
Vertical resolution	576lines	480 lines
VCD	**50Hz**	**60Hz**
Horiz. resolution	352 pixels	352 pixels
Vertical resolution	288lines	240 lines

Audio format

Digital	**MPEG/AC-3/ PCM**	**Compressed Digital** **16, 20, 24bits** fs, 44.1, 48, 96kHz
	MP3(ISO 9660)	96,112,128,256kbps & variable bit rate fs,32, 44.1,48 kHz

Analogue Sound Stereo
Dolby surround compatible downmix from Dolby Digital multi-channel sound

Audio performance

DA converter	24bits, 192KHz	
DVD	fs 96kHz	4Hz----44kHz
	fs 48kHz	4Hz----22kHz
SVCD	fs 48kHz	4Hz----22kHz
	fs 44.1kHz	4Hz----20kHz
CD/ VCD	fs 44.1kHz	4Hz----20kHz
Signal-Noise (1kHz)		>90dB
Dynamic Range (1kHz)		>80dB
Cross talk (1kHz)		>80dB
Distortion/Noise (1kHz)		>80dB
MPEG MP3		MPEG Audio L3

Connections

Scart Output	Euroconnector (For Europe version)
YPbPr output	Cinch 3x
Video output	Cinch(yellow)
Audio output (L+R)	Cinch (white/red)
Digital output	1 coaxial IEC60958 for CDDA/ LPCM IEC61937 for MPEG1/2, Dolby Digital
6 Channal analog ouput (For DVP5166K/98)	
Audio Front L/R	Cinch(White/Red)
Audio Rear L/R	Cinch(White/Red)
Audio Center	Cinch(Blue)
Audio Subwoofer	Cinch(Black)

Cabinet

Dimensions (w X h X d)	435 x 38 x 210 mm
Weight	Approximately 2 kg

Power consumption

Power supply Rating	110V-240V; 50/60HZ
Power consumption	<10W
Power consumption in standby mode	<1W

Specifications subject to change without prior notice.

Safety instruction, Warning & Notes

Safety instruction

1. General safety

Safety regulations require that during a repair:

. Connect the unit to the mains via an isolation transformer.

. Replace safety components indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must return the unit in its original condition. Pay, in particular, attention to the following points:

. Route the wires/cables correctly, and fix them with the mounted cable clamps.

. Check the insulation of the mains lead for external damage.

. Check the electrical DC resistance between the mains plug and the secondary side:

1) Unplug the mains cord, and connect a wire between the two pins of the mains plug.
2) Set the mains switch the "on" position (keep the mains cord unplug).
3) Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
4) Repair or correct unit when the resistance measurement is less than 1MΩ.
5) Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
6) Switch the unit "off", and remove the wire between the two pins of the mains plug.

2.Laser safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser device unit

Type : Semiconductor laser GaAlAs

Wavelength : 650nm (DVD)

: 780nm (VCD/CD)

Output power : 7mW (DVD)

: 10mW (DVD /CD)

Beam divergence: 60 degree

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

Warning

1.General

. All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handing during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential. Available ESD protection equipment:

1) Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
2) Wristband tester 4822 344 13999.

. Be careful during measurements in the live voltage section. The primary side of the power supply , including the heat sink, carries live mains voltage when you connect the player to the mains (even when the player is “off”!). It is possible to touch copper tracks and/or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A “lighting stroke” and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.

. Never replace modules, or components, while the unit is “on”.

2. Laser

. The use of optical instruments with this product, will increase eye hazard.

. Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.

. Repair handing should take place as much as possible with a disc loaded inside the player.

. Text below is placed inside the unit, on the laser cover shield:

CAUTION: VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.

Notes: Manufactured under licence from Dolby Laboratories. The double-D symbol is trademarks of Dolby Laboratories, Inc. All rights reserved.

Notes

Lead-Free requirement for service

INDENTIFICATION:

Regardless of special logo (not always indicated)

One must treat all sets from 1.1.2005 onwards, according next rules.

Important note: In fact also products a little older can also be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed
  solder alloy types (leaded and lead-free). If one cannot avoid, clean carefully the
  solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use highest lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. This will be communicated via AYS-website.
  Do not re-use BGAs at all.
- For sets produced before 1.1.2005, containing leaded soldering-tin and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website:
  www.atyourservice.ce.Philips.com

You find more information to:

BGA-de-/soldering (+ baking instructions)
Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

Mechanical and Dismantling Instructions

Dismantling Instruction

The following guideline is a general instruction for how to dismantle the player, Detailed operation done according the set unit.
Step1: Remove 5 screws around the Top Cover, then remove the Top Cover (Figure 1).

Figure 1

Step2: If it is necessary to dismantle Loader or Front Panel, It should be remove the Front door assembly first. (Figure 2)
Note: Make sure to operate gently otherwise the guider would be damaged.

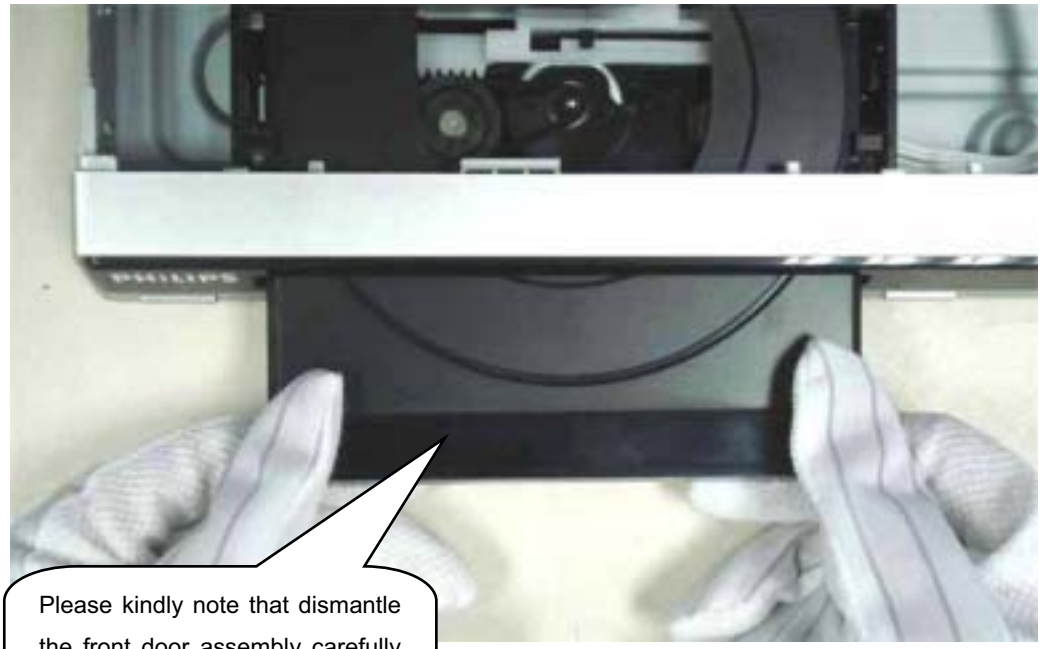


Figure 2

Mechanical and Dismantling Instructions

Dismantling Instruction

Step3: If the tray can't open in normal way, you can make it through the instruction as below (Figure 3).
Note: Make sure to operate gently otherwise the guider would be damaged.

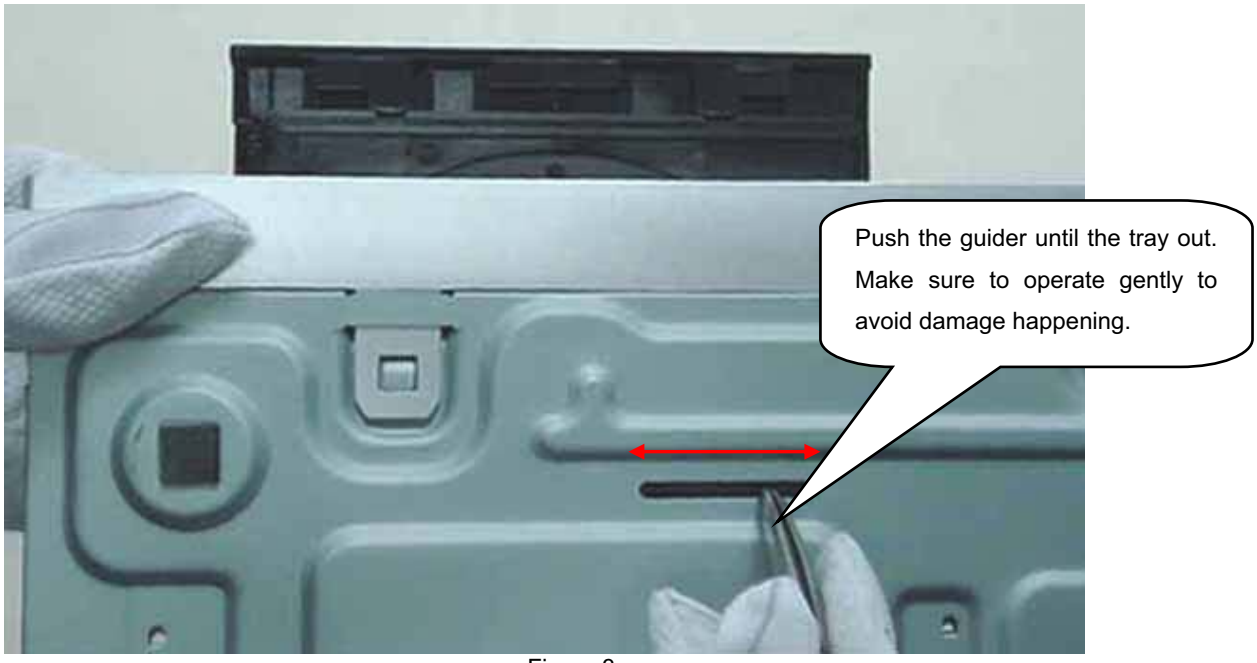


Figure 3

Step4: Dismantling Loader, disconnect the 3 connectors aiming in the below figure, and remove 1 screw around the Loader. (Figure 4)

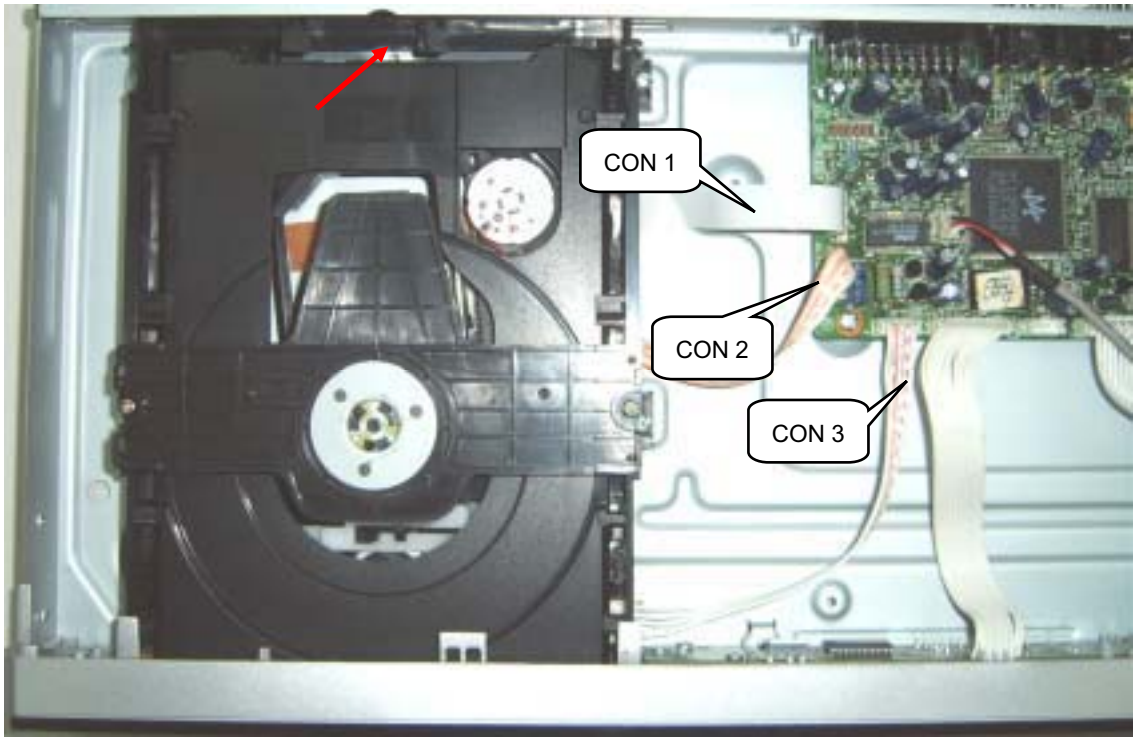


Figure 4

Mechanical and Dismantling Instructions

Dismantling Instruction

Step5: Dismantling Front Panel, disconnect the 3 connector, then release the snaps on the both sides of Front Panel and bottom cabinet , then gently pull the Panel out from the set. (Figure 5 & 6 & 7)

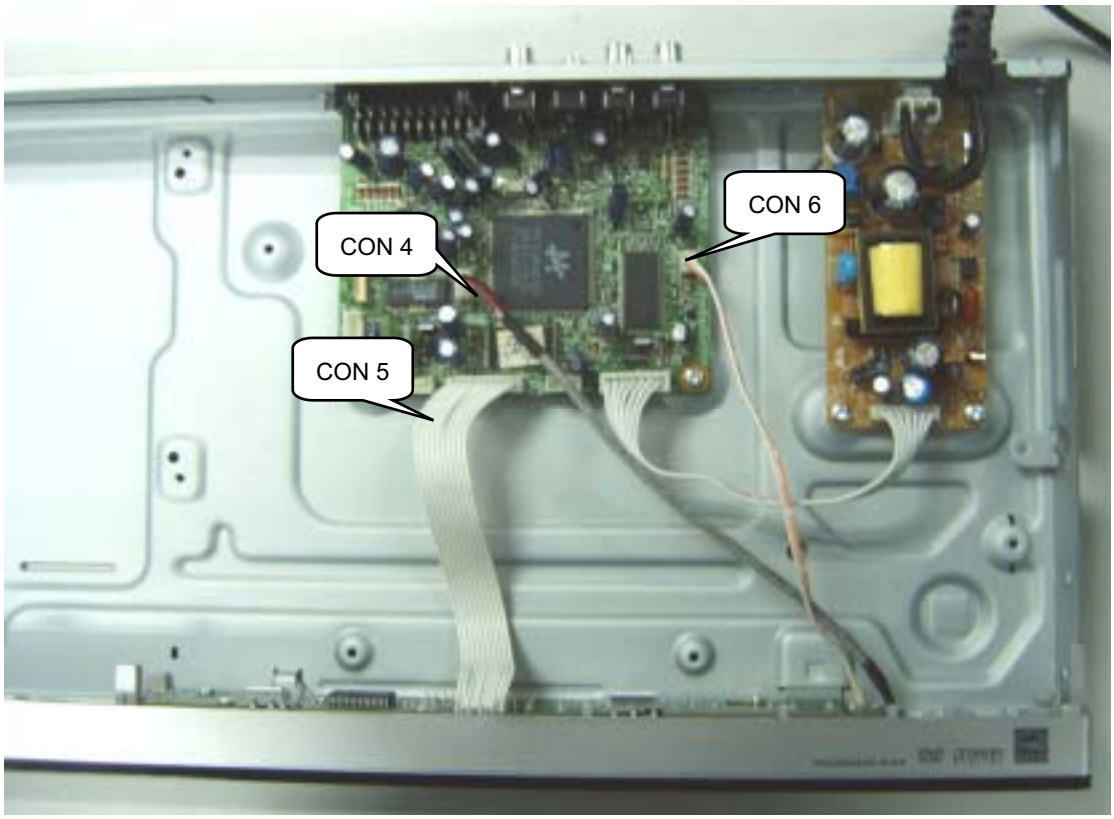


Figure 5

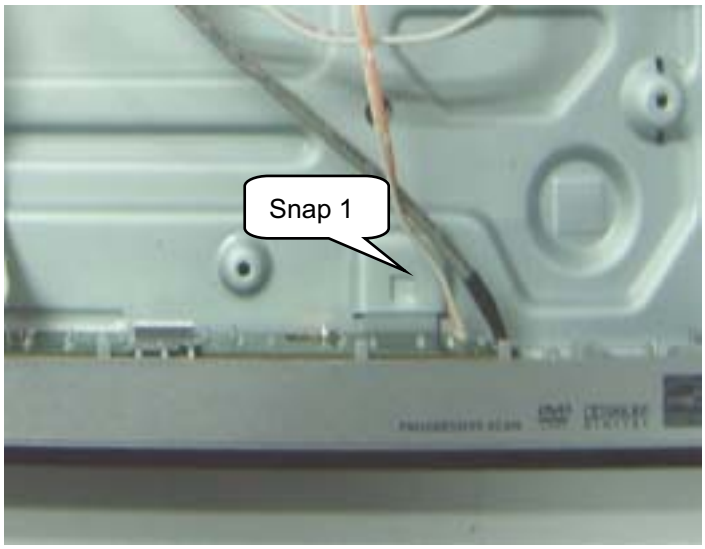


Figure 6

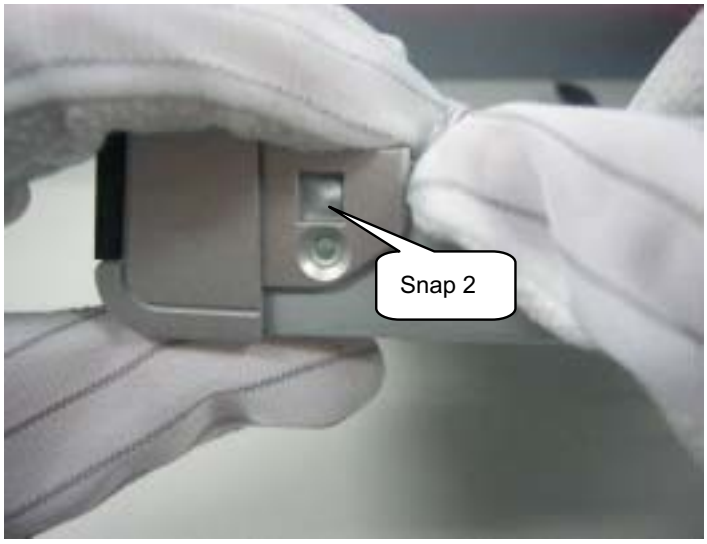


Figure 7

Mechanical and Dismantling Instructions

Dismantling Instruction

Step6: Dismantling Main Board, first disconnect the connector, and then remove 4 screws. (Figure 8)

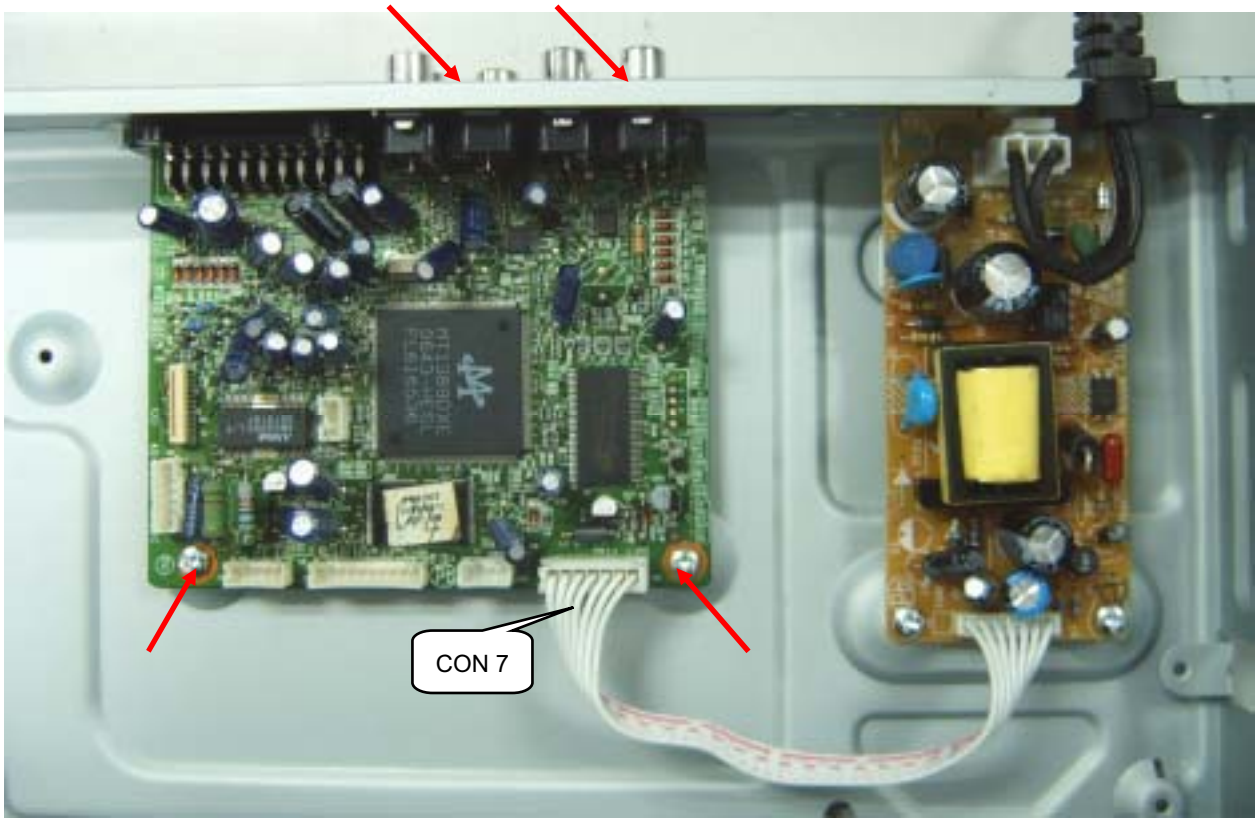


Figure 8

Step7: Remove the 2 screws on Power Board to dismantle the Power Board. (Figure 9)

Figure 9

Software upgrade

Preparation to upgrade software

1) Start the CD Burning software and create a new CD project (Data Disc) with the following setting:
   Label: DVP5XXX (No need the label name)
   File Name: DVPXXXX_XX.BIN
   Power on the set and open the tray, then press <5><5> to check the File Name.

Note: It is required capital letter for the File System name

2) Burn the data onto a blank CDR

A. Procedure for software upgrade:

1) Power on the set and insert the prepared Upgrade CDR.
2) The set will starts reading disc & response with the following display TV screen:
   Upgrade File DETECTED
   Upgrade?
   Press Play TO START.
3) Press <OK> button to confirm, then screen will display :
   Files coping…
   UPGRADING…
4) The upgraded disc will automatically out when files coping complete, then take out the disc.
5) About 1 minute later, the tray will automatically close when upgrading complete.

B. Read out the software versions to confirm upgrading

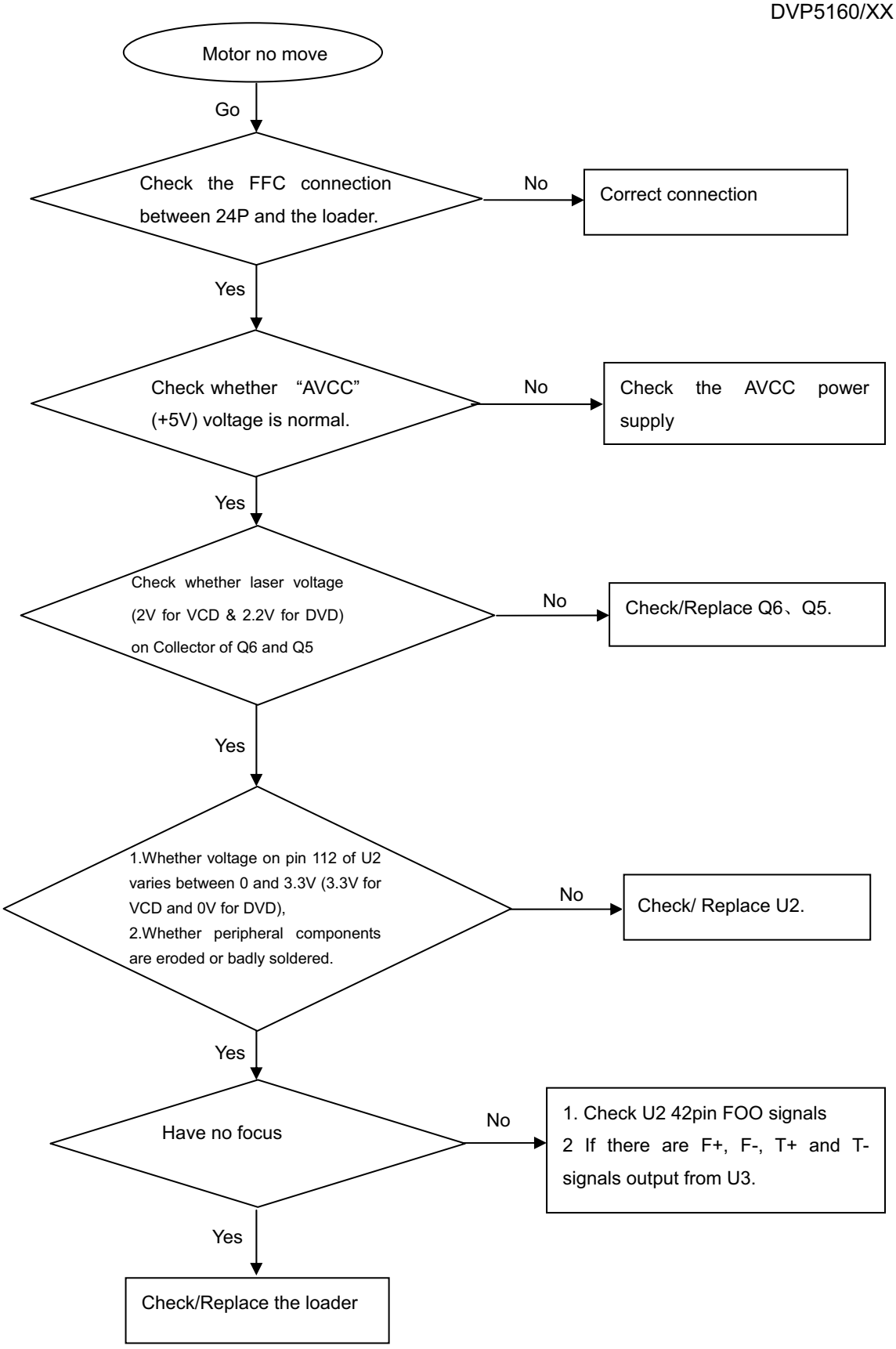
1) Power on the set and press <Setup> button on the remote control.
2) Press<1><3><7><9>button to check the software information.
   The software version and other information are display on the TV screen as follows:

Version	XX.XX.XX.XX (Main version)
SUB-VER	XX.XX.XX.XX (software version of application software)
8032	XX.XX.XX.XX
Servo	XX.XX.XX.XX (software version of Servo)
RISC	XX.XX.XX.XX
DSP	XX.XX.XX.XX
Region Code	X

Caution: The set must not be power off during upgrading, Otherwise the Main board will be damaged entirely.

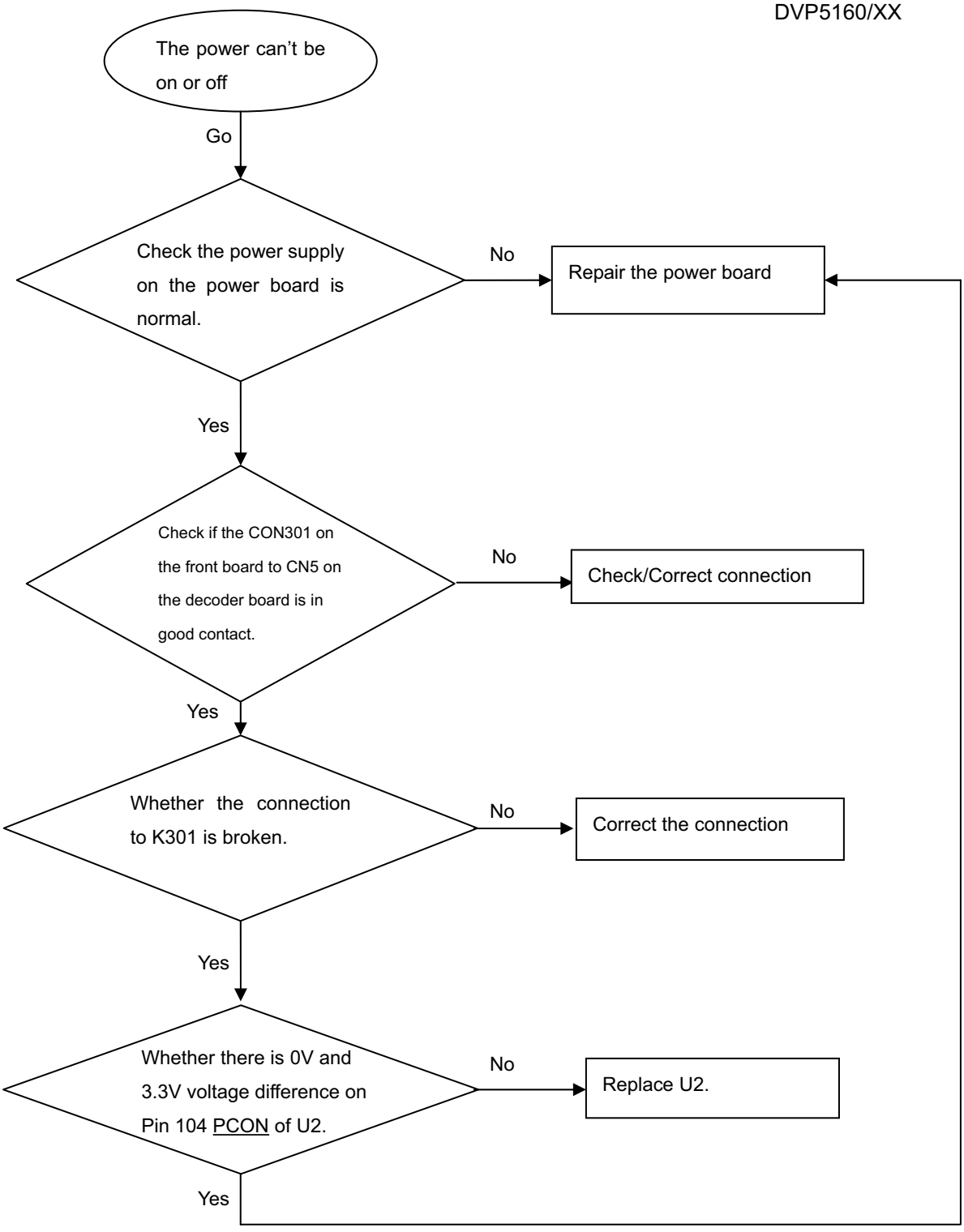
Spindle motor does not move

Remark: Trouble shooting chart for DVP5160/XX


Motor no move
Go
Check the FFC connection between 24P and the loader.
No
Correct connection
Yes
Check whether "AVCC" (+5V) voltage is normal.
No
Check the AVCC power supply
Yes
Check whether laser voltage (2V for VCD & 2.2V for DVD) on Collector of Q6 and Q5
No
Check/Replace Q6、Q5.
Yes
1.Whether voltage on pin 112 of U2 varies between 0 and 3.3V (3.3V for VCD and 0V for DVD),
2.Whether peripheral components are eroded or badly soldered.
No
Check/ Replace U2.
Yes
Have no focus
No
1. Check U2 42pin FOO signals
2 If there are F+, F-, T+ and T- signals output from U3.
Yes
Check/Replace the loader

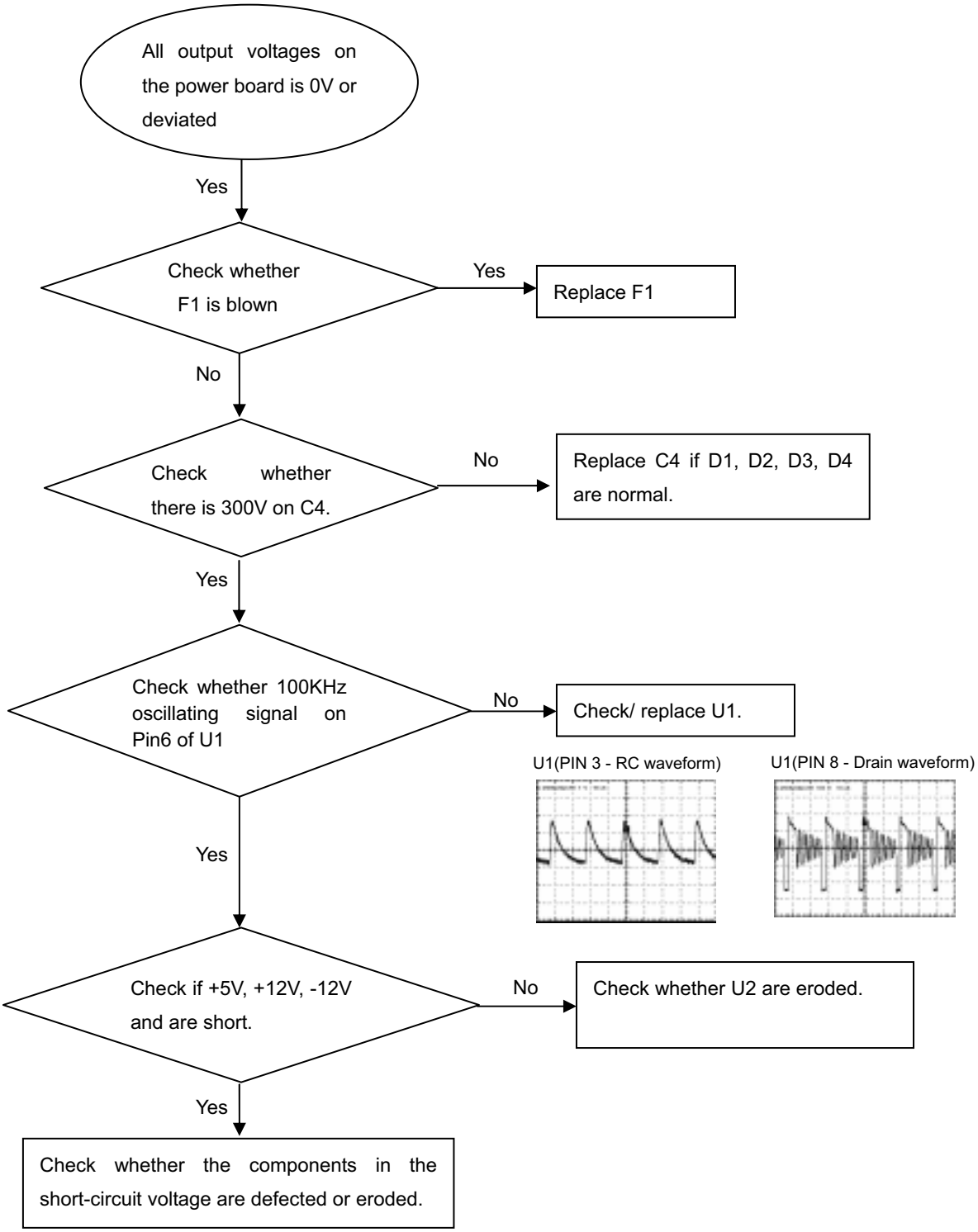
The power can not be on or off

Remark: Trouble shooting chart for DVP5160/XX


The power can't be on or off
Go
Check the power supply on the power board is normal.
No
Repair the power board
Yes
Check if the CON301 on the front board to CN5 on the decoder board is in good contact.
No
Check/Correct connection
Yes
Whether the connection to K301 is broken.
No
Correct the connection
Yes
Whether there is 0V and 3.3V voltage difference on Pin 104 PCON of U2.
No
Replace U2.
Yes

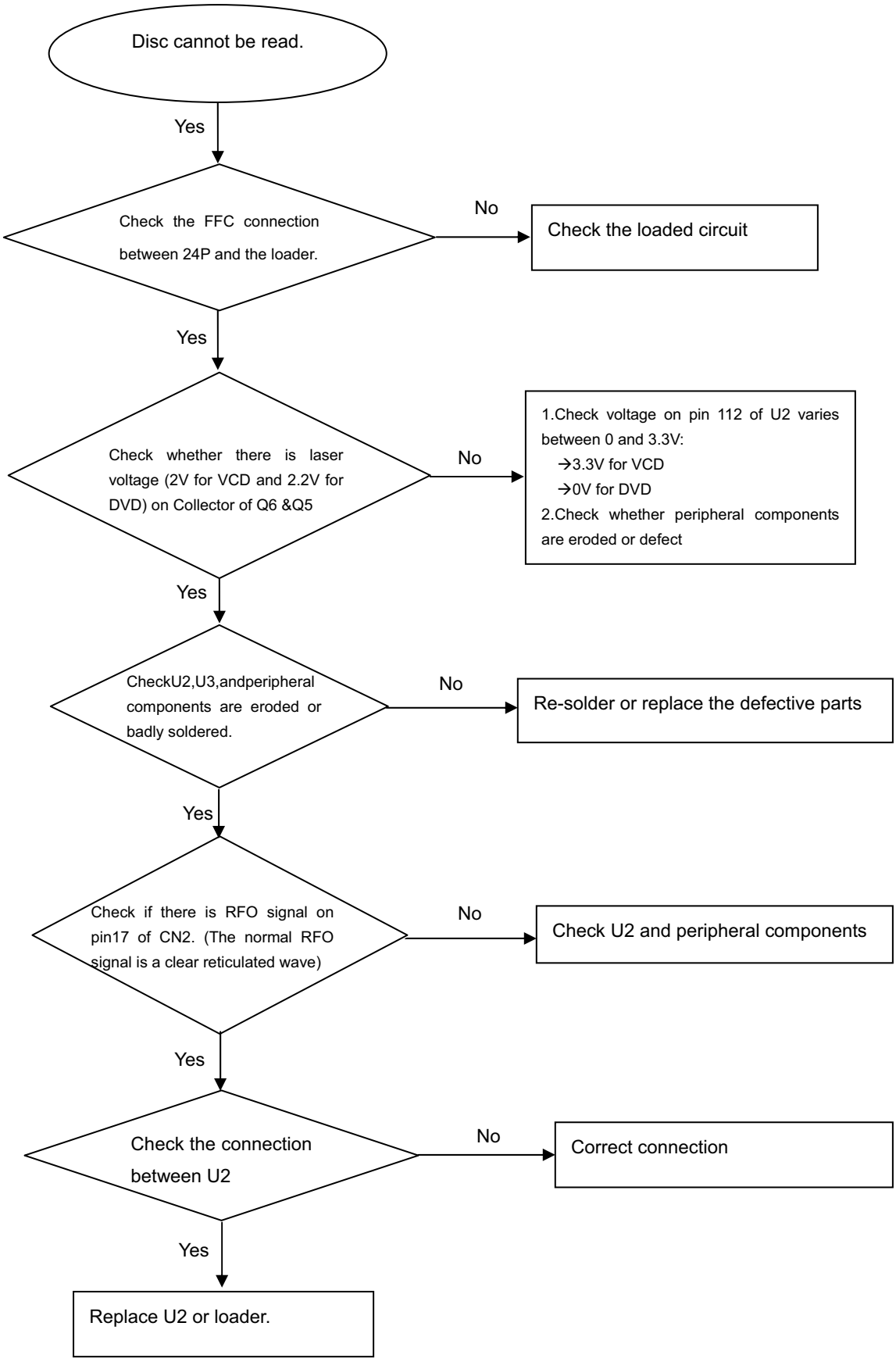
All output voltages on the power board is 0V or deviated.

Remark: Trouble shooting chart for DVP5160/XX


All output voltages on the power board is 0V or deviated
Yes
Check whether F1 is blown
Yes
Replace F1
No
Check whether there is 300V on C4.
No
Replace C4 if D1, D2, D3, D4 are normal.
Yes
Check whether 100KHz oscillating signal on Pin6 of U1
No
Check/ replace U1.
U1(PIN 3 - RC waveform)
U1(PIN 8 - Drain waveform)
Yes
Check if +5V, +12V, -12V and are short.
No
Check whether U2 are eroded.
Yes
Check whether the components in the short-circuit voltage are defected or eroded.

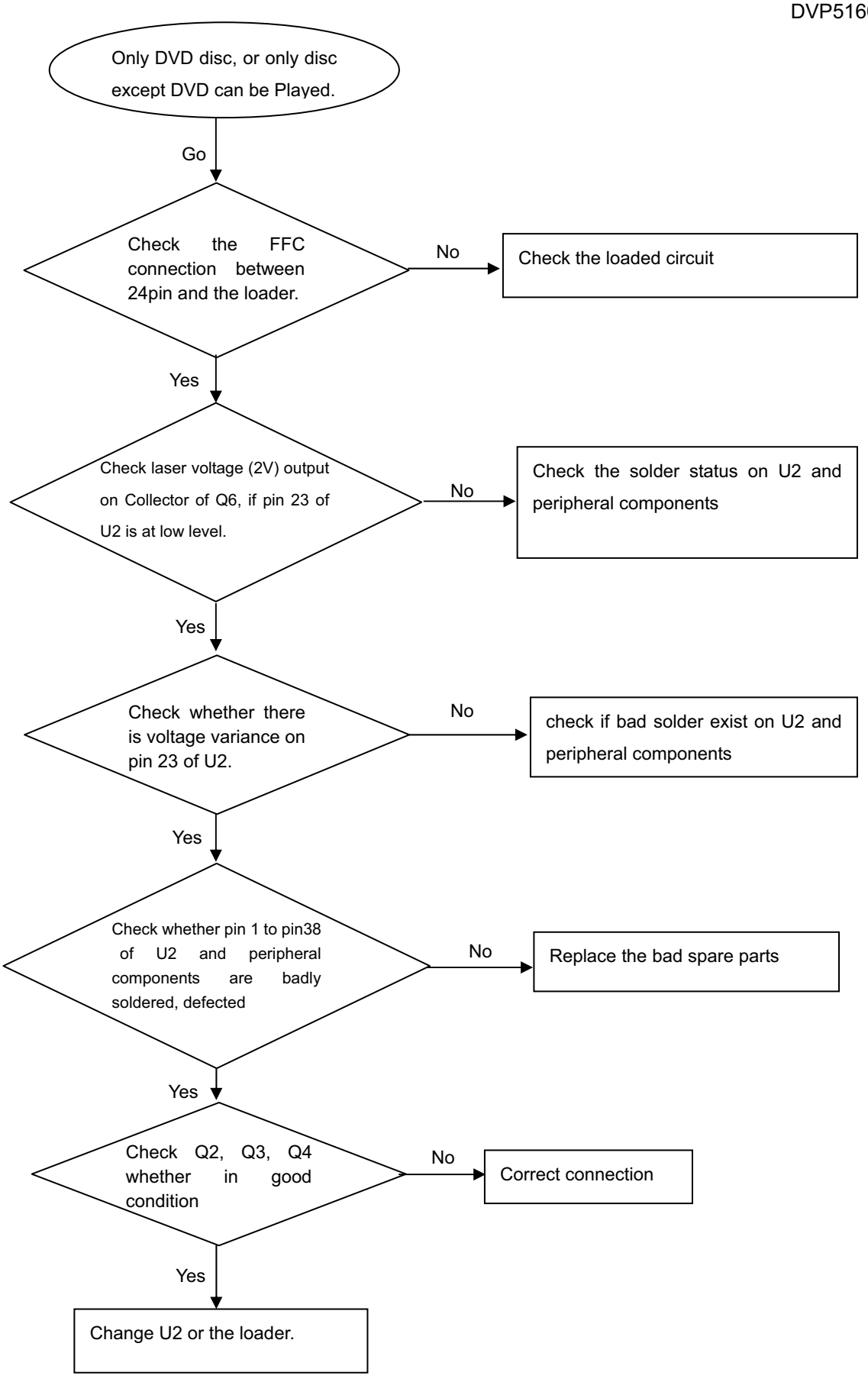
Disc cannot be read.

Remark: Trouble shooting chart for DVP5160/XX


Disc cannot be read.
Yes
Check the FFC connection between 24P and the loader.
No
Check the loaded circuit
Yes
Check whether there is laser voltage (2V for VCD and 2.2V for DVD) on Collector of Q6 &Q5
No
1.Check voltage on pin 112 of U2 varies between 0 and 3.3V:
→3.3V for VCD
→0V for DVD
2.Check whether peripheral components are eroded or defect
Yes
CheckU2,U3,andperipheral components are eroded or badly soldered.
No
Re-solder or replace the defective parts
Yes
Check if there is RFO signal on pin17 of CN2. (The normal RFO signal is a clear reticulated wave)
No
Check U2 and peripheral components
Yes
Check the connection between U2
No
Correct connection
Yes
Replace U2 or loader.

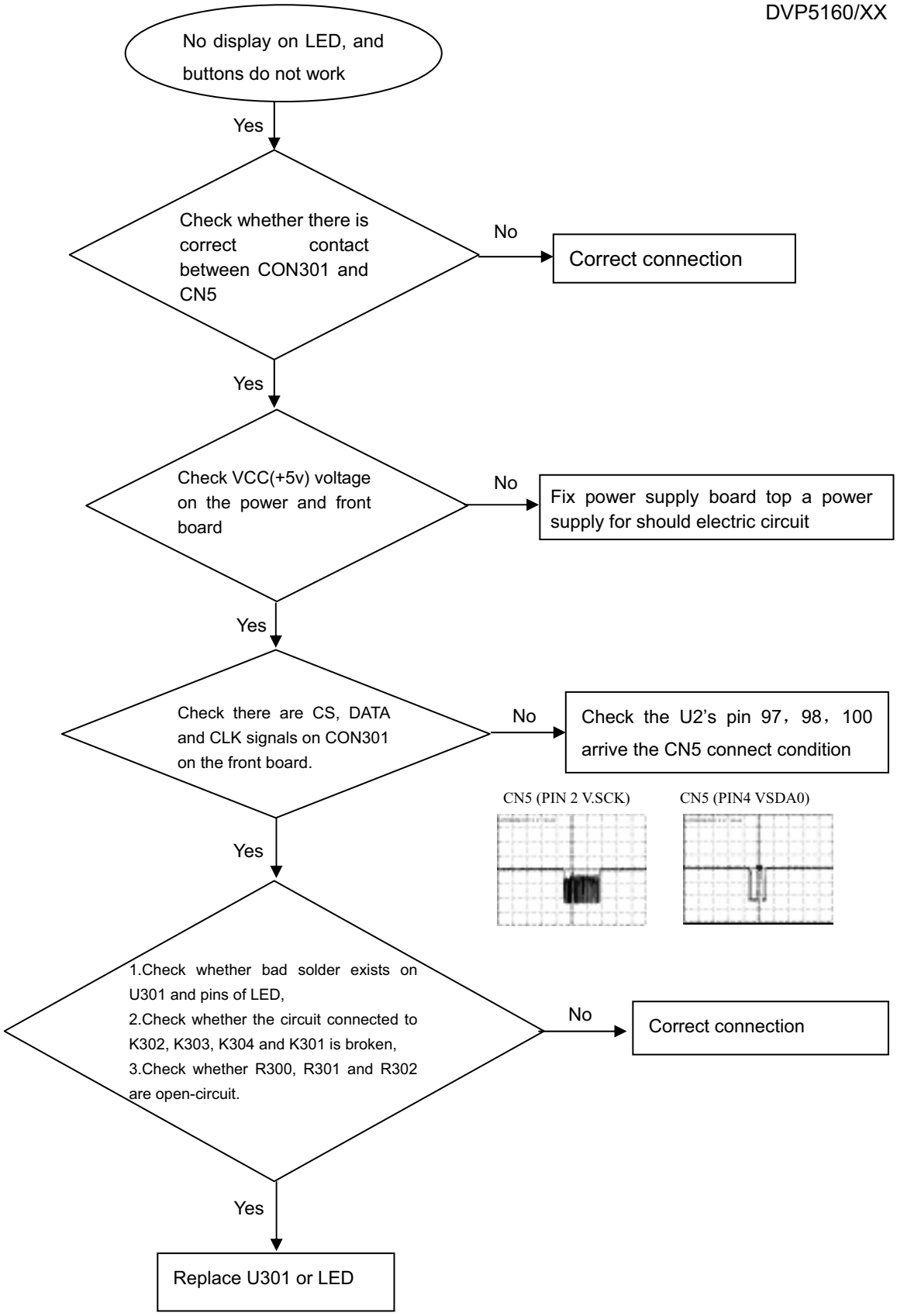
Only DVD disc or only disc except DVD can be played

Remark: Trouble shooting chart for DVP5160/XX


Only DVD disc, or only disc except DVD can be Played.
Go
Check the FFC connection between 24pin and the loader.
No
Check the loaded circuit
Yes
Check laser voltage (2V) output on Collector of Q6, if pin 23 of U2 is at low level.
No
Check the solder status on U2 and peripheral components
Yes
Check whether there is voltage variance on pin 23 of U2.
No
check if bad solder exist on U2 and peripheral components
Yes
Check whether pin 1 to pin38 of U2 and peripheral components are badly soldered, defected
No
Replace the bad spare parts
Yes
Check Q2, Q3, Q4 whether in good condition
No
Correct connection
Yes
Change U2 or the loader.

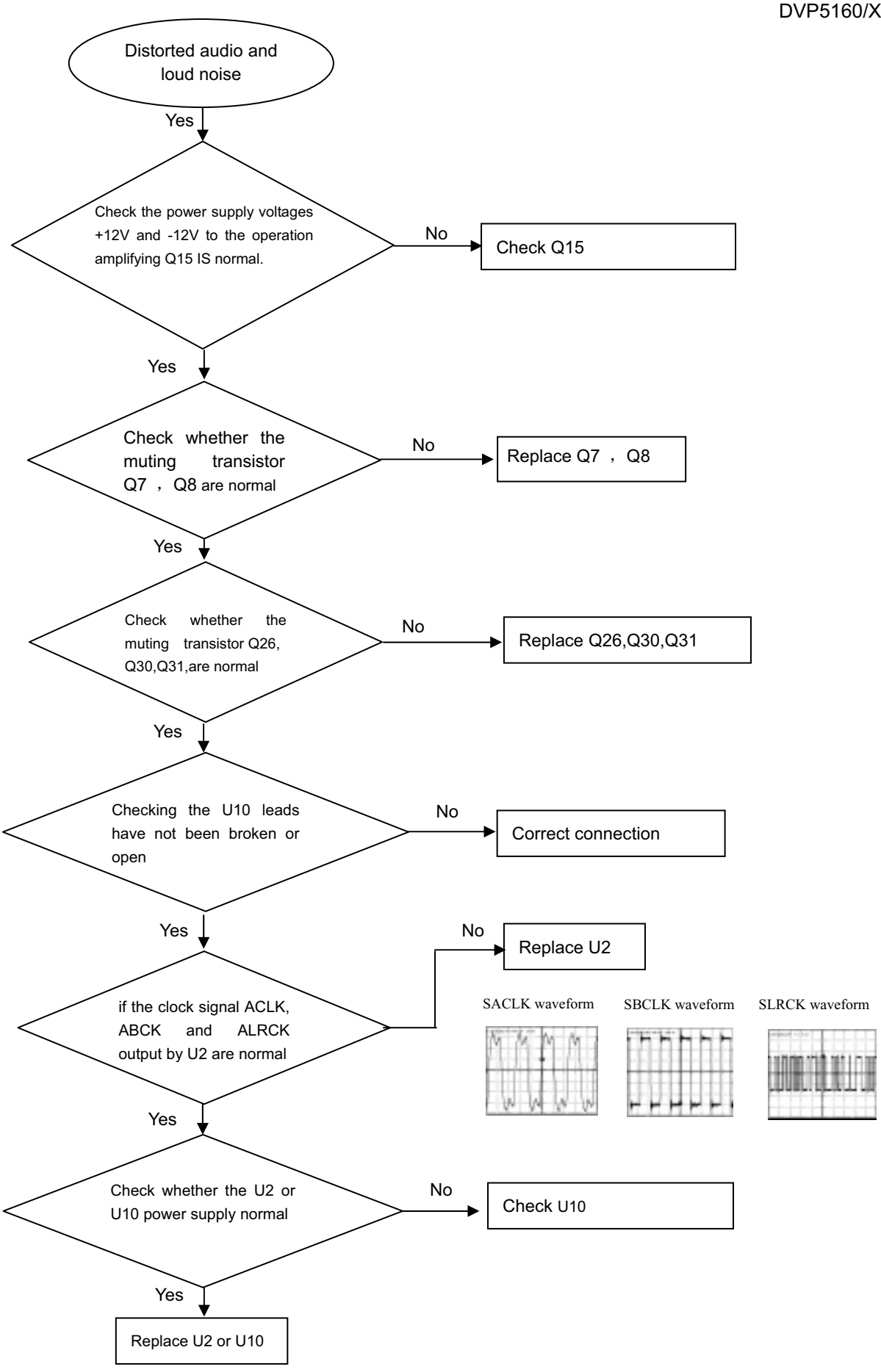
No display on LEDD, and buttons do not work

Remark: Trouble shooting chart for DVP5160/XX


No display on LED, and buttons do not work
Yes
Check whether there is correct contact between CON301 and CN5
No
Correct connection
Yes
Check VCC(+5v) voltage on the power and front board
No
Fix power supply board top a power supply for should electric circuit
Yes
Check there are CS, DATA and CLK signals on CON301 on the front board.
No
Check the U2's pin 97，98，100 arrive the CN5 connect condition
CN5 (PIN 2 V.SCK)
CN5 (PIN4 VSDA0)
Yes
1.Check whether bad solder exists on U301 and pins of LED,
2.Check whether the circuit connected to K302, K303, K304 and K301 is broken,
3.Check whether R300, R301 and R302 are open-circuit.
No
Correct connection
Yes
Replace U301 or LED

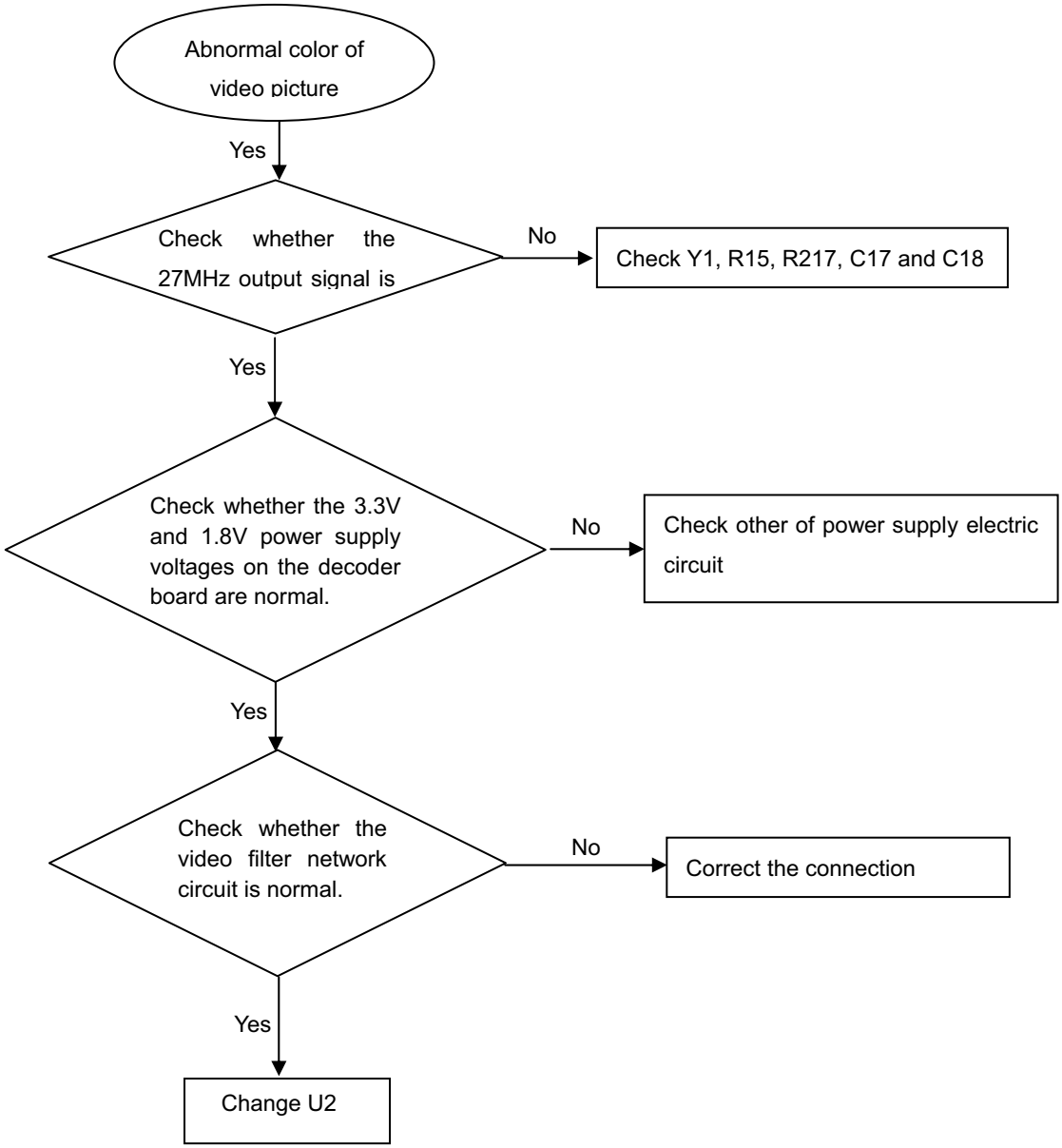
Distorted audio and loud noise

Remark: Trouble shooting chart for DVP5160/XX



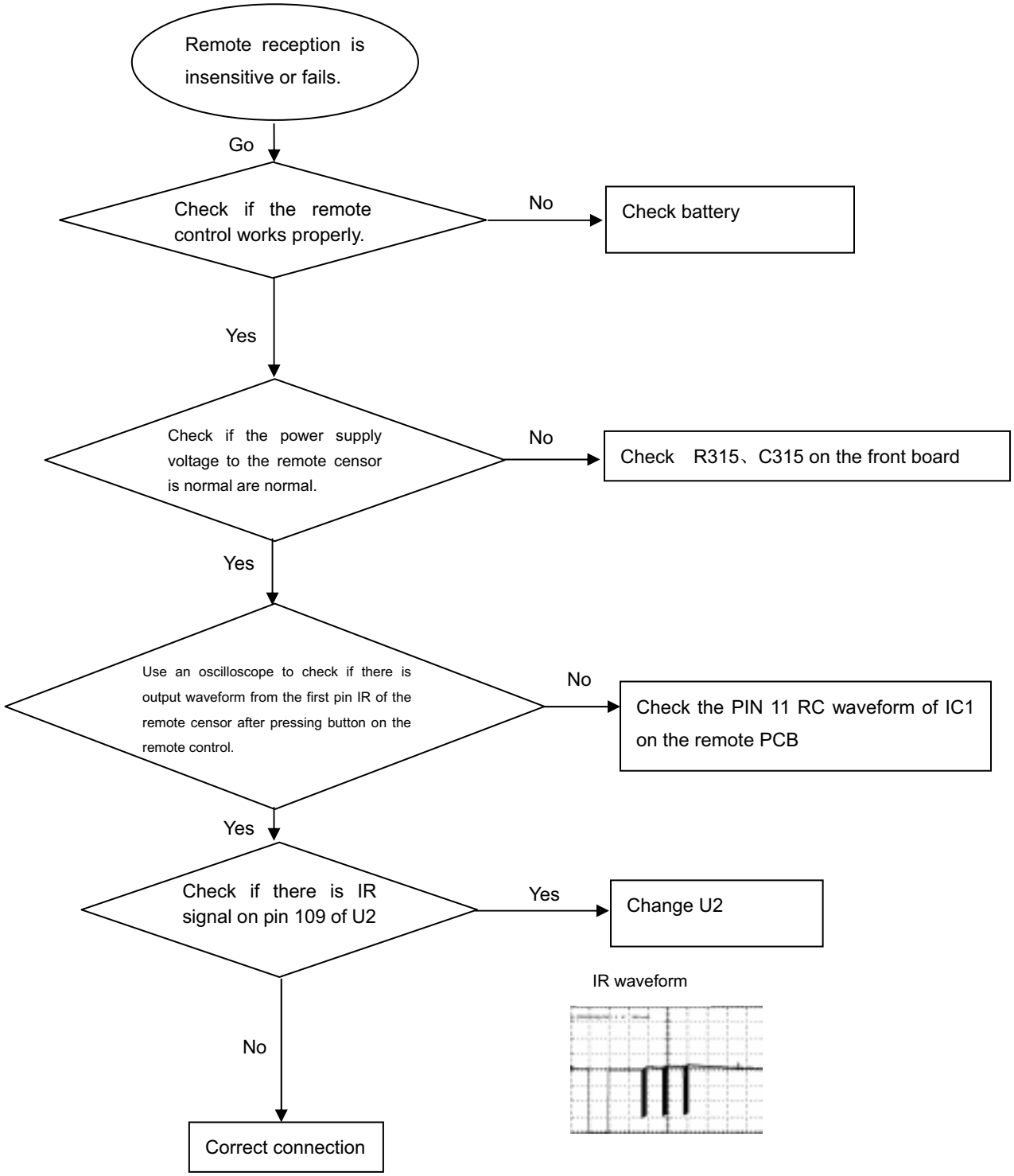
Abnormal color of video picture

Remark: Trouble shooting chart for DVP5160/XX


Abnormal color of video picture
Yes
Check whether the 27MHz output signal is
No
Check Y1, R15, R217, C17 and C18
Yes
Check whether the 3.3V and 1.8V power supply voltages on the decoder board are normal.
No
Check other of power supply electric circuit
Yes
Check whether the video filter network circuit is normal.
No
Correct the connection
Yes
Change U2

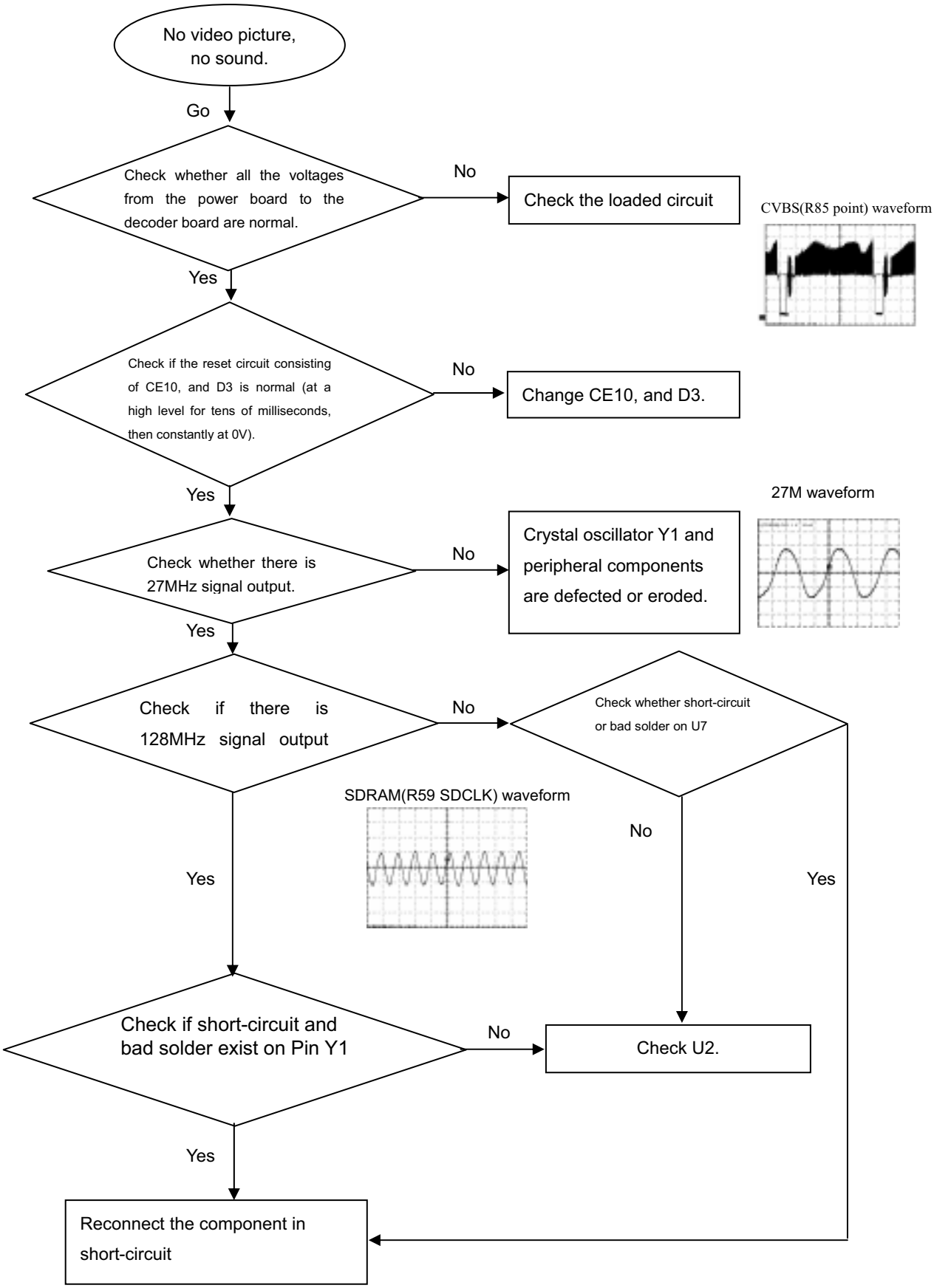
Remote reception is insensitive or fails.

Remark: Trouble shooting chart for DVP5160/XX


Remote reception is insensitive or fails.
Go
Check if the remote control works properly.
No
Check battery
Yes
Check if the power supply voltage to the remote censor is normal are normal.
No
Check R315、C315 on the front board
Yes
Use an oscilloscope to check if there is output waveform from the first pin IR of the remote censor after pressing button on the remote control.
No
Check the PIN 11 RC waveform of IC1 on the remote PCB
Yes
Check if there is IR signal on pin 109 of U2
Yes
Change U2
IR waveform
No
Correct connection

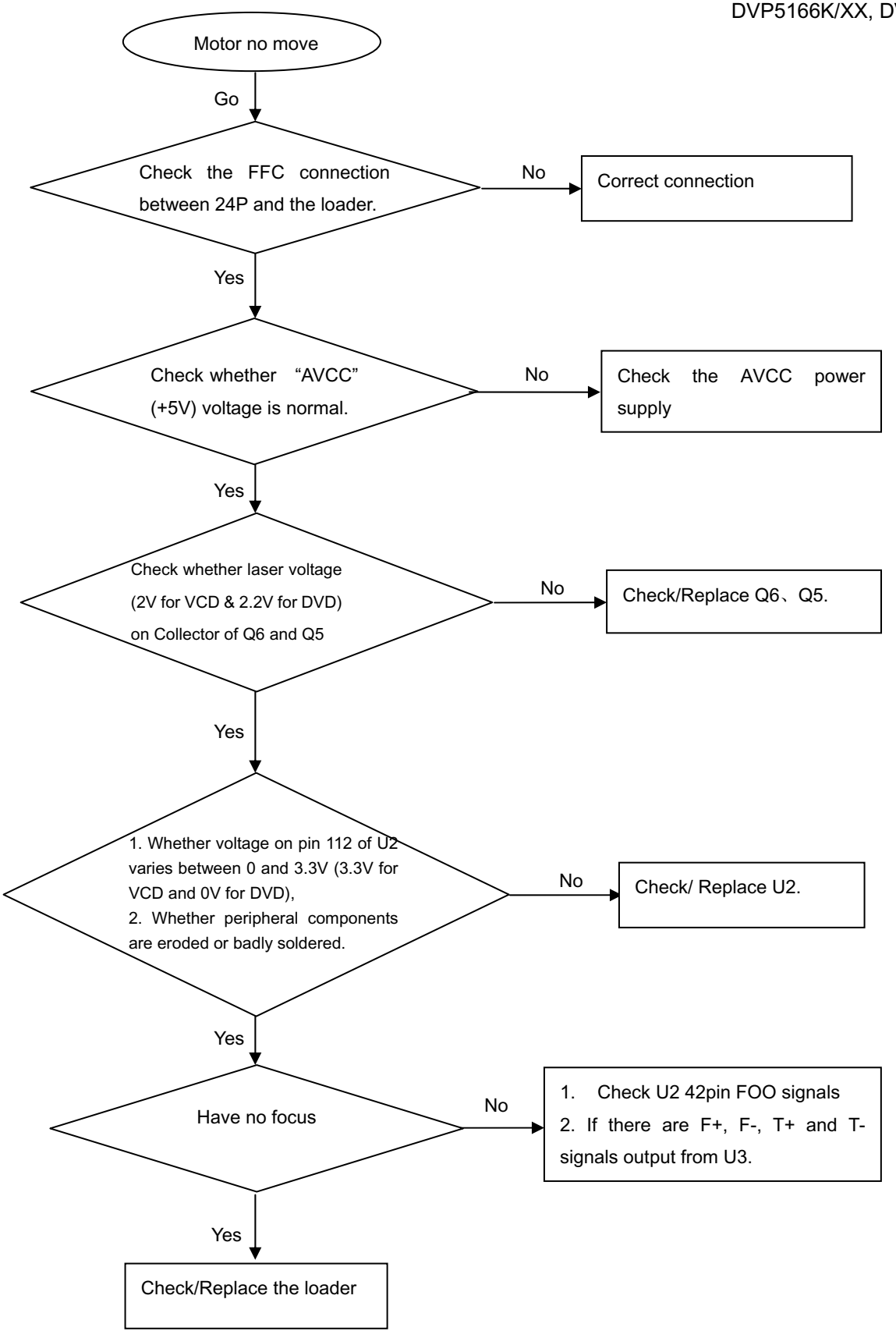
No video picture, no sound.

Remark: Trouble shooting chart for DVP5160/XX


No video picture, no sound.
Go
Check whether all the voltages from the power board to the decoder board are normal.
No
Check the loaded circuit
CVBS(R85 point) waveform
Yes
Check if the reset circuit consisting of CE10, and D3 is normal (at a high level for tens of milliseconds, then constantly at 0V).
No
Change CE10, and D3.
Yes
27M waveform
Check whether there is 27MHz signal output.
No
Crystal oscillator Y1 and peripheral components are defected or eroded.
Yes
Check if there is 128MHz signal output
No
Check whether short-circuit or bad solder on U7
SDRAM(R59 SDCLK) waveform
No
Yes
Yes
Check if short-circuit and bad solder exist on Pin Y1
No
Check U2.
Yes
Reconnect the component in short-circuit

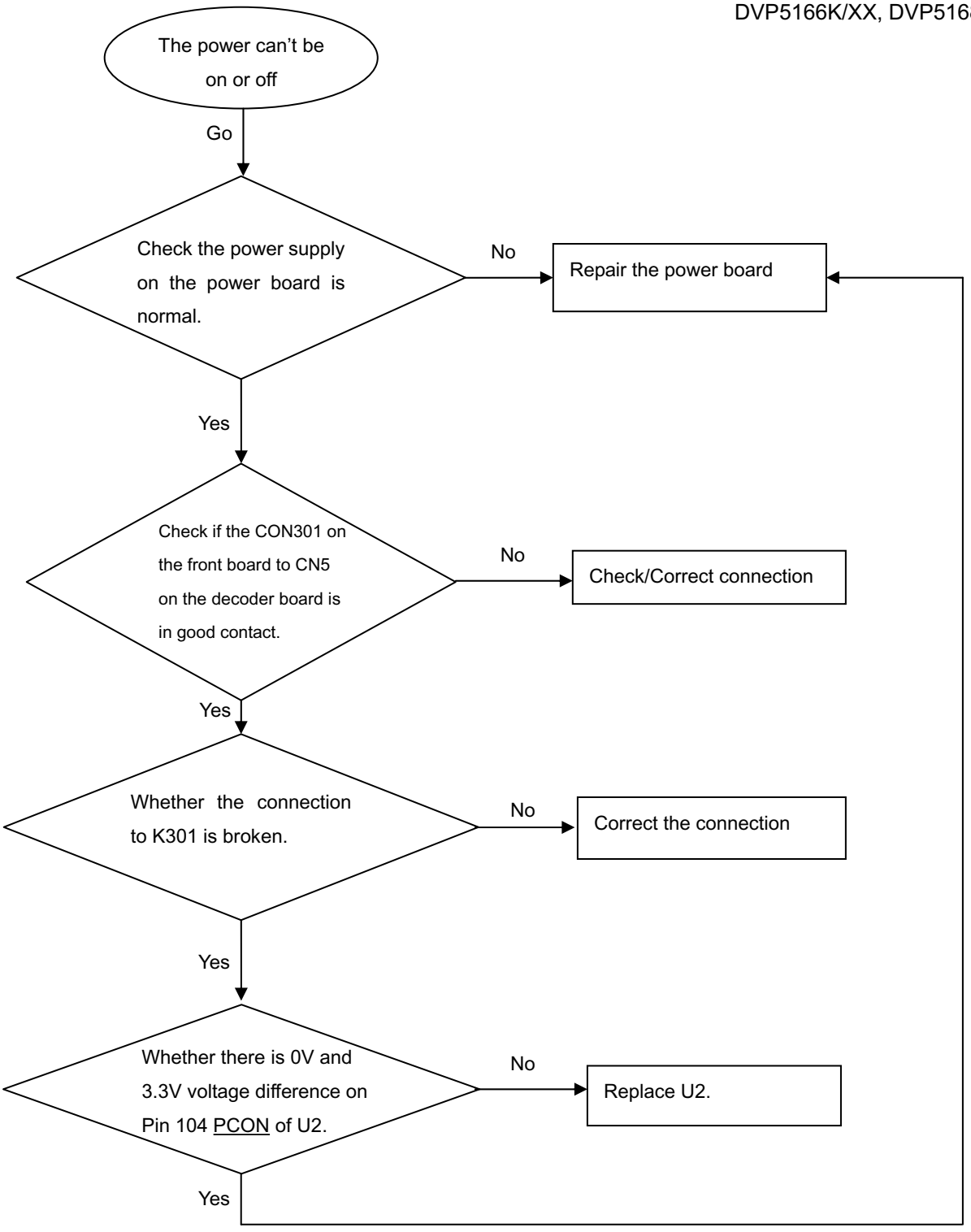
Spindle motor does not move

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX


Motor no move
Go
Check the FFC connection between 24P and the loader.
No
Correct connection
Yes
Check whether "AVCC" (+5V) voltage is normal.
No
Check the AVCC power supply
Yes
Check whether laser voltage (2V for VCD & 2.2V for DVD) on Collector of Q6 and Q5
No
Check/Replace Q6、Q5.
Yes
1. Whether voltage on pin 112 of U2 varies between 0 and 3.3V (3.3V for VCD and 0V for DVD),
2. Whether peripheral components are eroded or badly soldered.
No
Check/ Replace U2.
Yes
Have no focus
No
1. Check U2 42pin FOO signals
2. If there are F+, F-, T+ and T- signals output from U3.
Yes
Check/Replace the loader

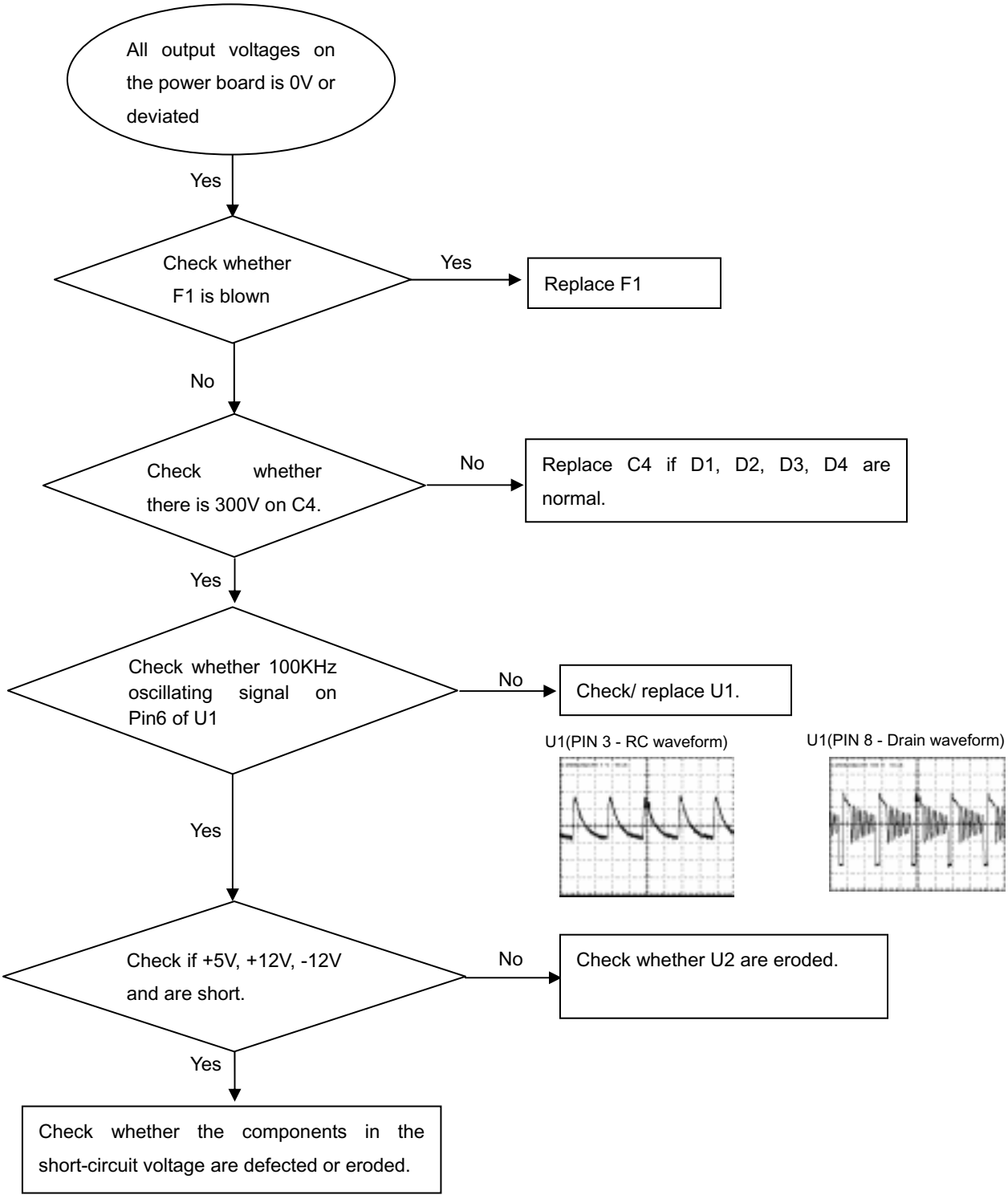
The power can not be on or off

Remark: Trouble shooting chart for
DVP5166K/XX, DVP5168K/XX


The power can't be on or off
Go
Check the power supply on the power board is normal.
No
Repair the power board
Yes
Check if the CON301 on the front board to CN5 on the decoder board is in good contact.
No
Check/Correct connection
Yes
Whether the connection to K301 is broken.
No
Correct the connection
Yes
Whether there is 0V and 3.3V voltage difference on Pin 104 PCON of U2.
No
Replace U2.
Yes

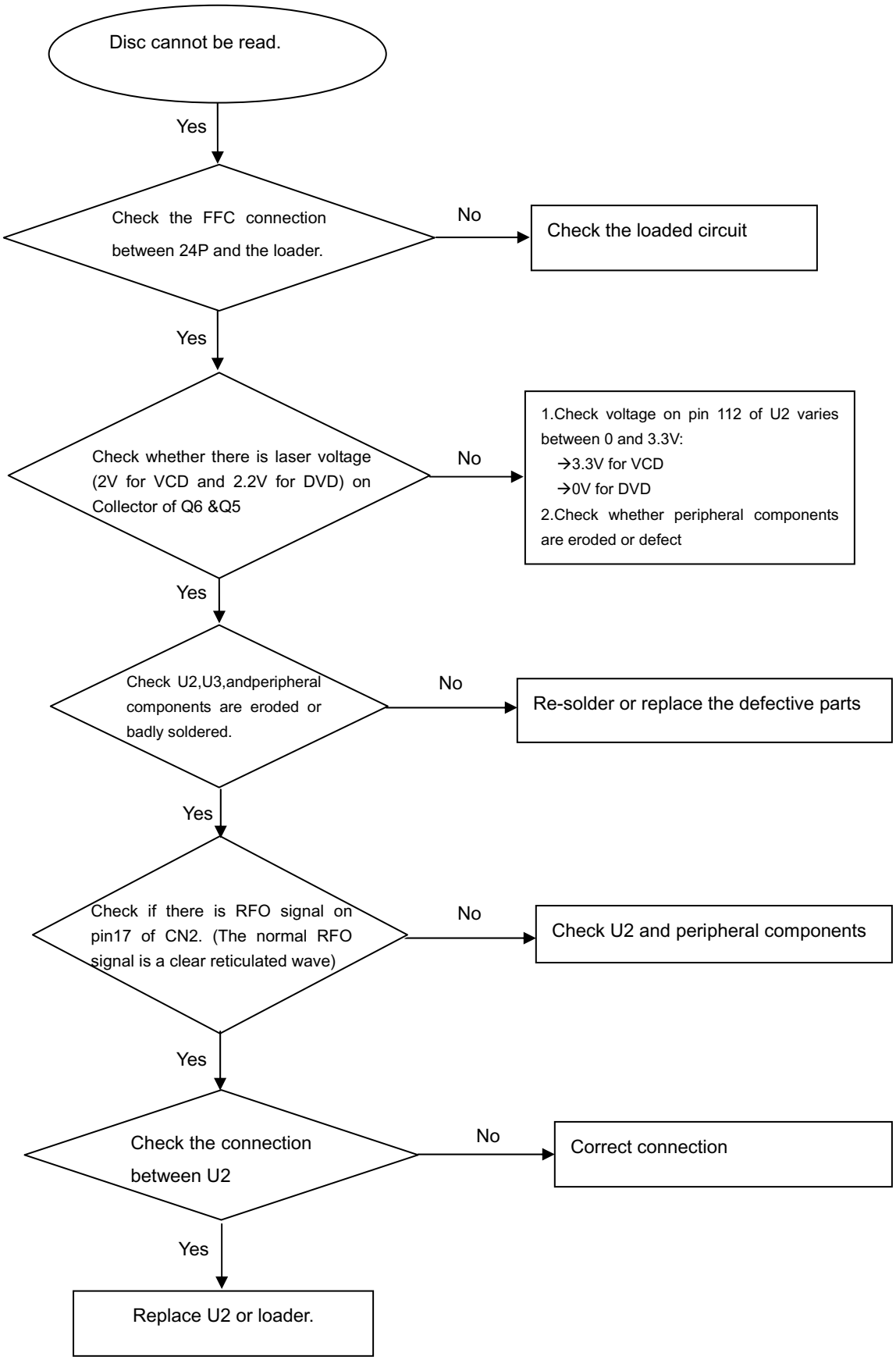
All output voltages on the power board is 0V or deviated.

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX


All output voltages on the power board is 0V or deviated
Yes
Check whether F1 is blown
Yes
Replace F1
No
Check whether there is 300V on C4.
No
Replace C4 if D1, D2, D3, D4 are normal.
Yes
Check whether 100KHz oscillating signal on Pin6 of U1
No
Check/ replace U1.
U1(PIN 3 - RC waveform)
U1(PIN 8 - Drain waveform)
Yes
Check if +5V, +12V, -12V and are short.
No
Check whether U2 are eroded.
Yes
Check whether the components in the short-circuit voltage are defected or eroded.

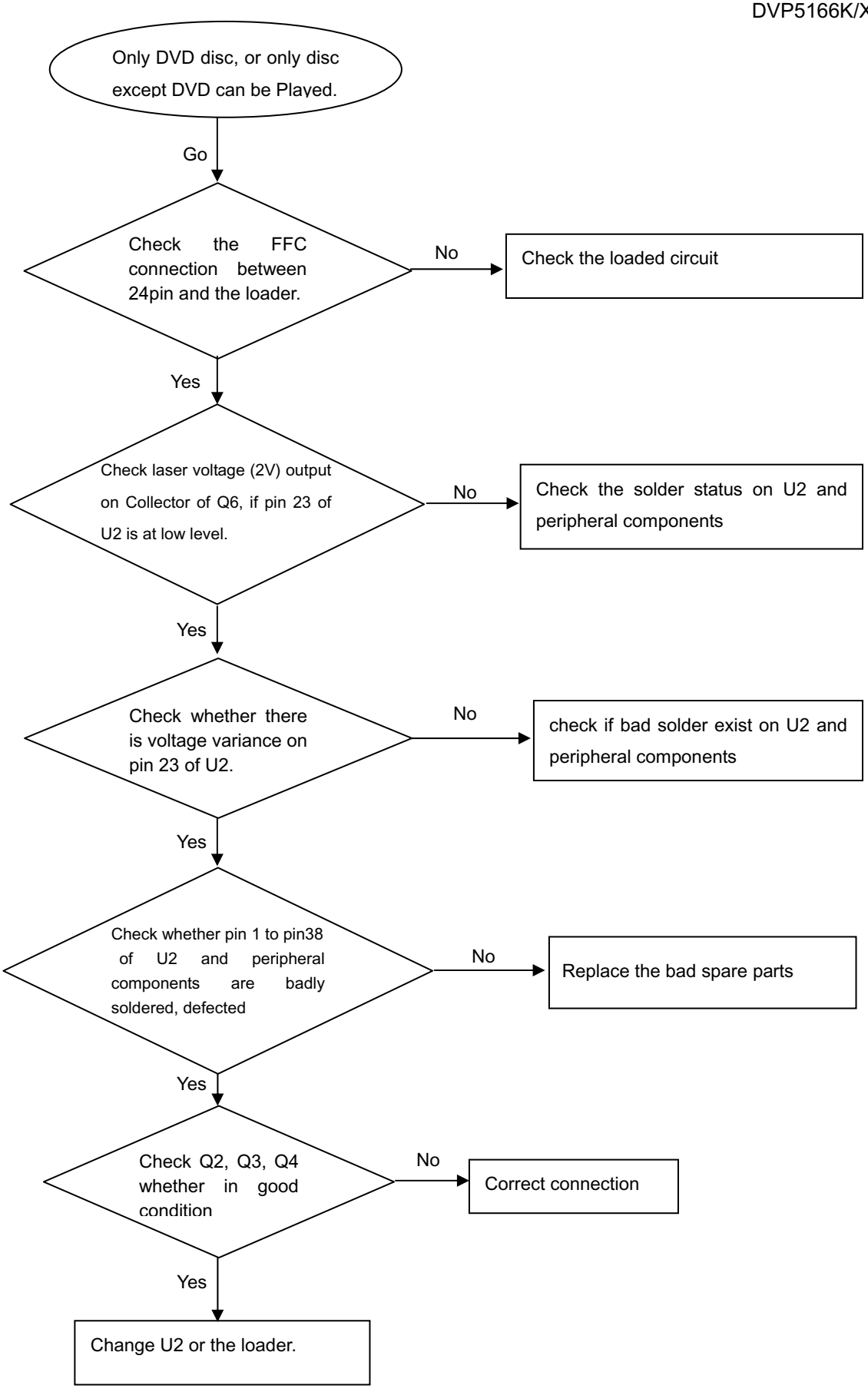
Disc cannot be read.

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX


Disc cannot be read.
Yes
Check the FFC connection between 24P and the loader.
No
Check the loaded circuit
Yes
Check whether there is laser voltage (2V for VCD and 2.2V for DVD) on Collector of Q6 &Q5
No
1.Check voltage on pin 112 of U2 varies between 0 and 3.3V:
→3.3V for VCD
→0V for DVD
2.Check whether peripheral components are eroded or defect
Yes
Check U2,U3,andperipheral components are eroded or badly soldered.
No
Re-solder or replace the defective parts
Yes
Check if there is RFO signal on pin17 of CN2. (The normal RFO signal is a clear reticulated wave)
No
Check U2 and peripheral components
Yes
Check the connection between U2
No
Correct connection
Yes
Replace U2 or loader.

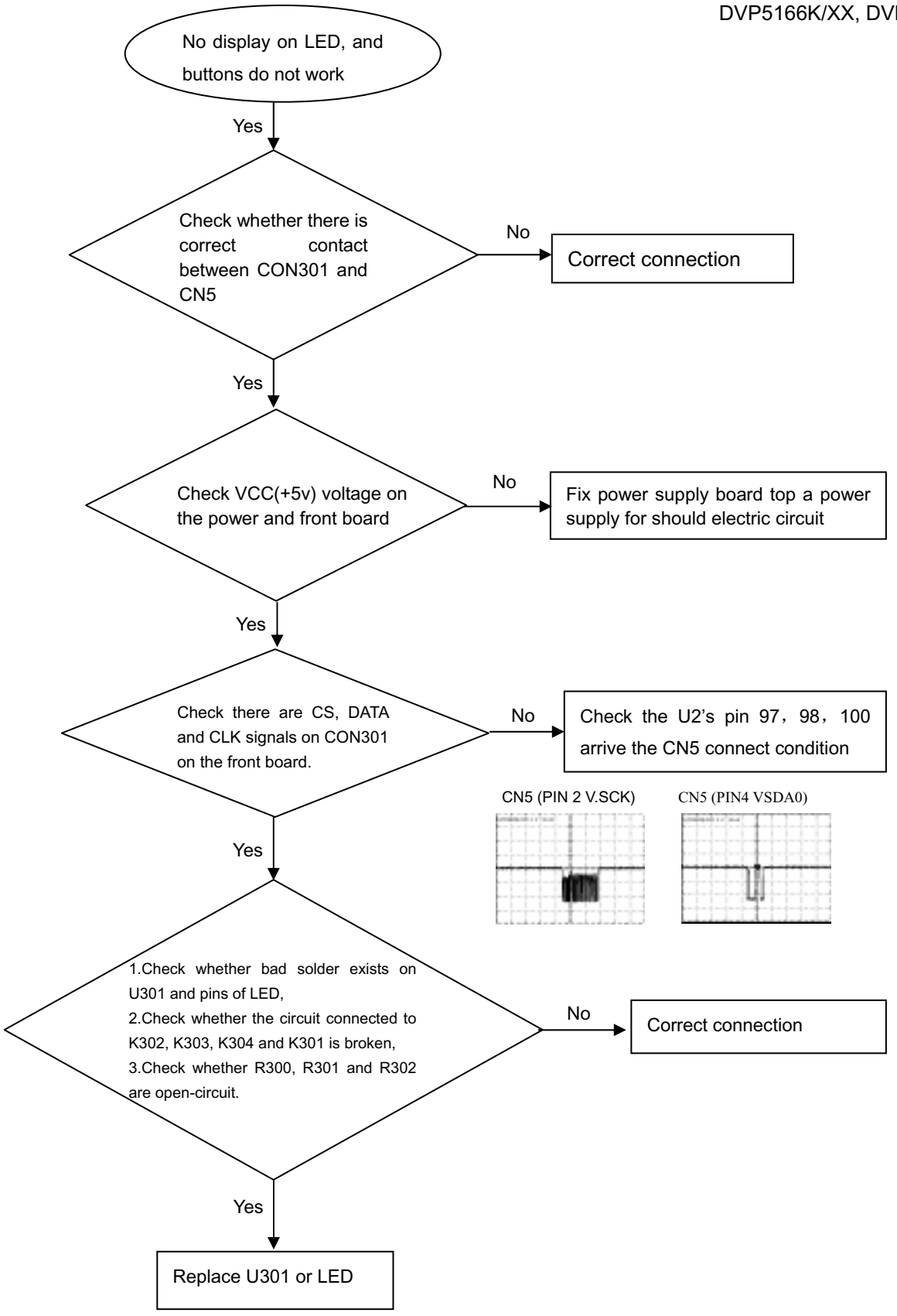
Only DVD disc or only disc except DVD can be played

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX


Only DVD disc, or only disc except DVD can be Played.
Go
Check the FFC connection between 24pin and the loader.
No
Check the loaded circuit
Yes
Check laser voltage (2V) output on Collector of Q6, if pin 23 of U2 is at low level.
No
Check the solder status on U2 and peripheral components
Yes
Check whether there is voltage variance on pin 23 of U2.
No
check if bad solder exist on U2 and peripheral components
Yes
Check whether pin 1 to pin38 of U2 and peripheral components are badly soldered, defected
No
Replace the bad spare parts
Yes
Check Q2, Q3, Q4 whether in good condition
No
Correct connection
Yes
Change U2 or the loader.

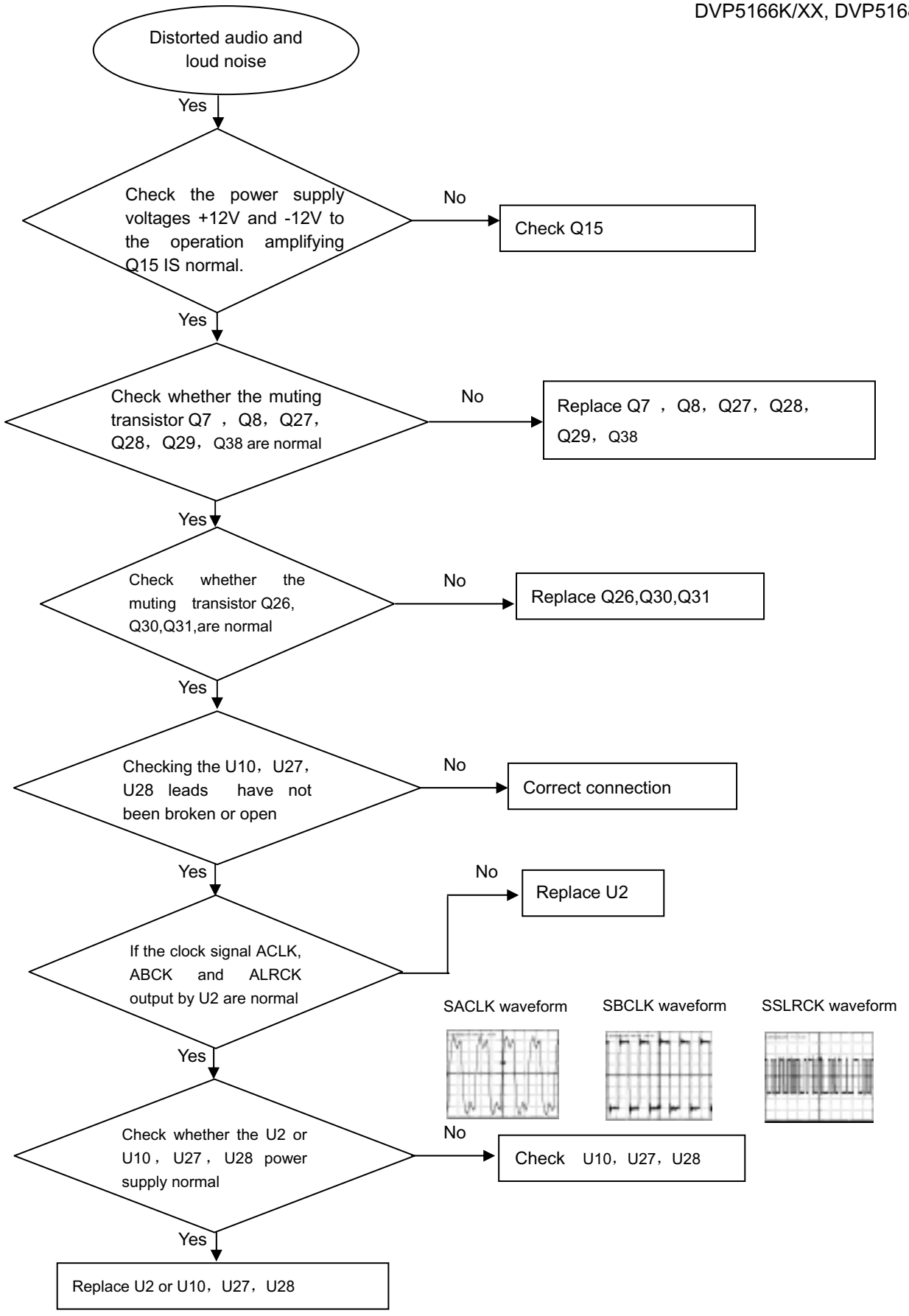
No display on LEDD, and buttons do not work

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX


No display on LED, and buttons do not work
Yes
Check whether there is correct contact between CON301 and CN5
No
Correct connection
Yes
Check VCC(+5v) voltage on the power and front board
No
Fix power supply board top a power supply for should electric circuit
Yes
Check there are CS, DATA and CLK signals on CON301 on the front board.
No
Check the U2's pin 97，98，100 arrive the CN5 connect condition
CN5 (PIN 2 V.SCK)
CN5 (PIN4 VSDA0)
Yes
1.Check whether bad solder exists on U301 and pins of LED,
2.Check whether the circuit connected to K302, K303, K304 and K301 is broken,
3.Check whether R300, R301 and R302 are open-circuit.
No
Correct connection
Yes
Replace U301 or LED

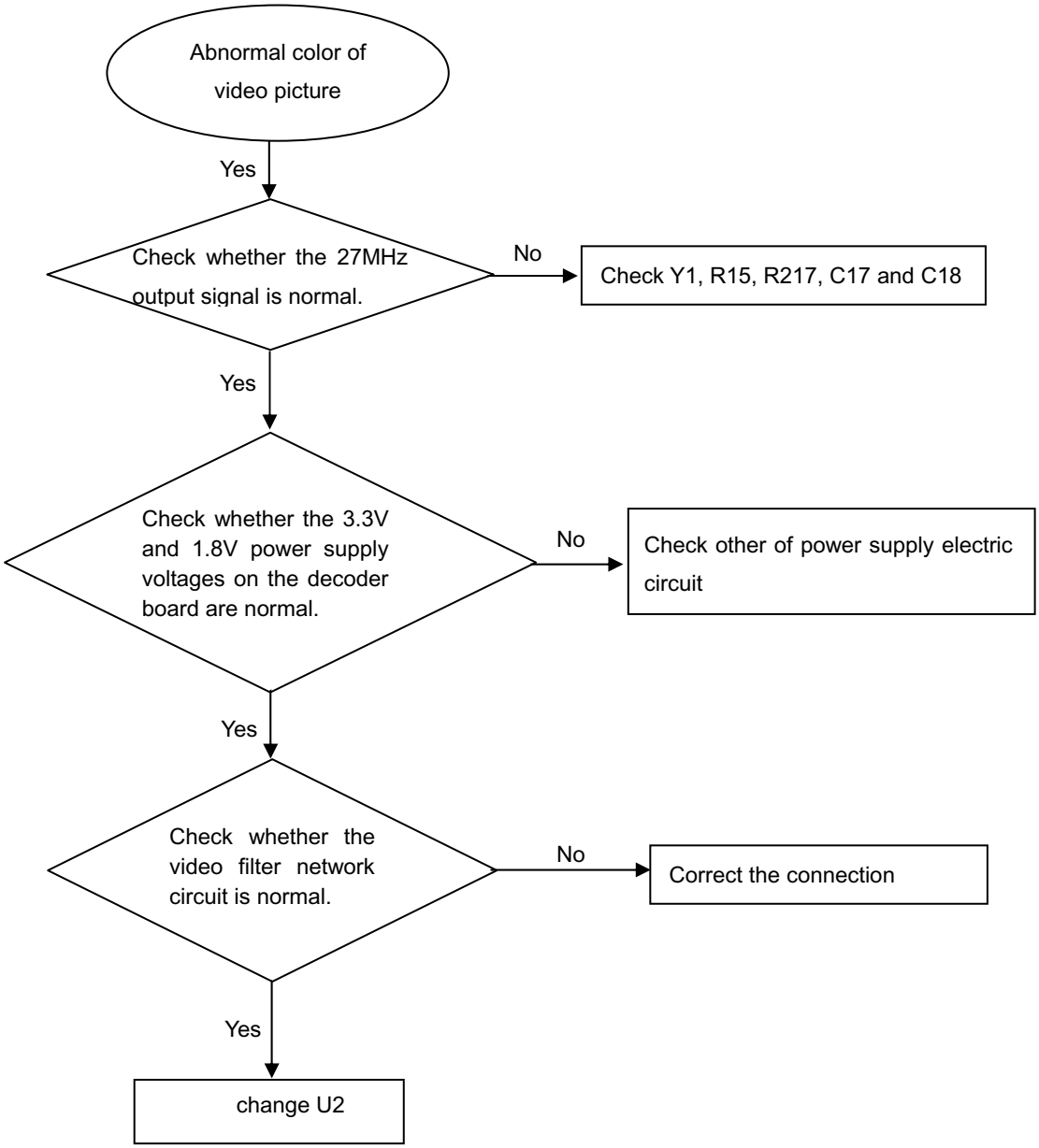
Distorted audio and loud noise

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX



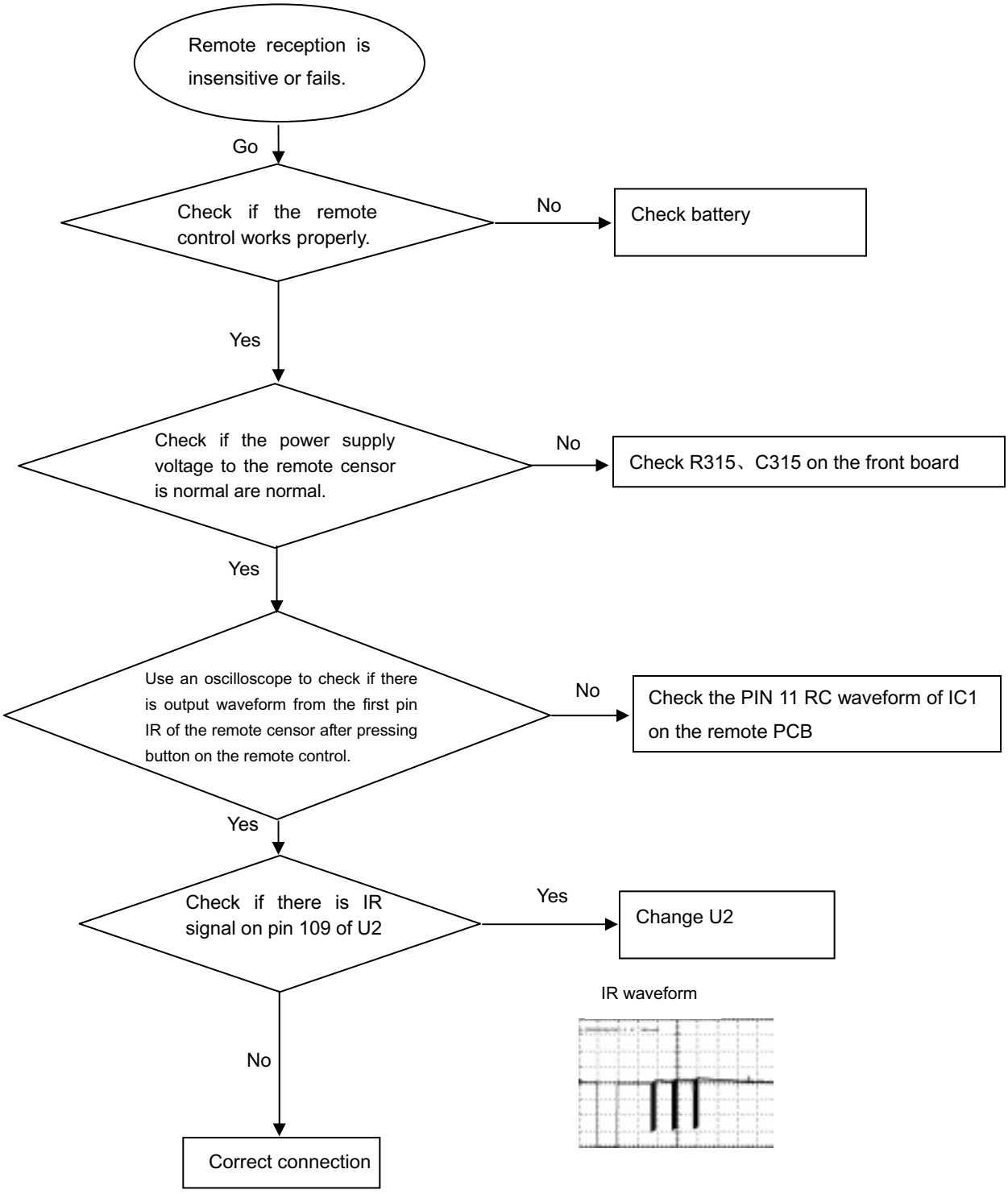
Abnormal color of video picture

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX


Abnormal color of video picture
Yes
Check whether the 27MHz output signal is normal.
No
Check Y1, R15, R217, C17 and C18
Yes
Check whether the 3.3V and 1.8V power supply voltages on the decoder board are normal.
No
Check other of power supply electric circuit
Yes
Check whether the video filter network circuit is normal.
No
Correct the connection
Yes
change U2

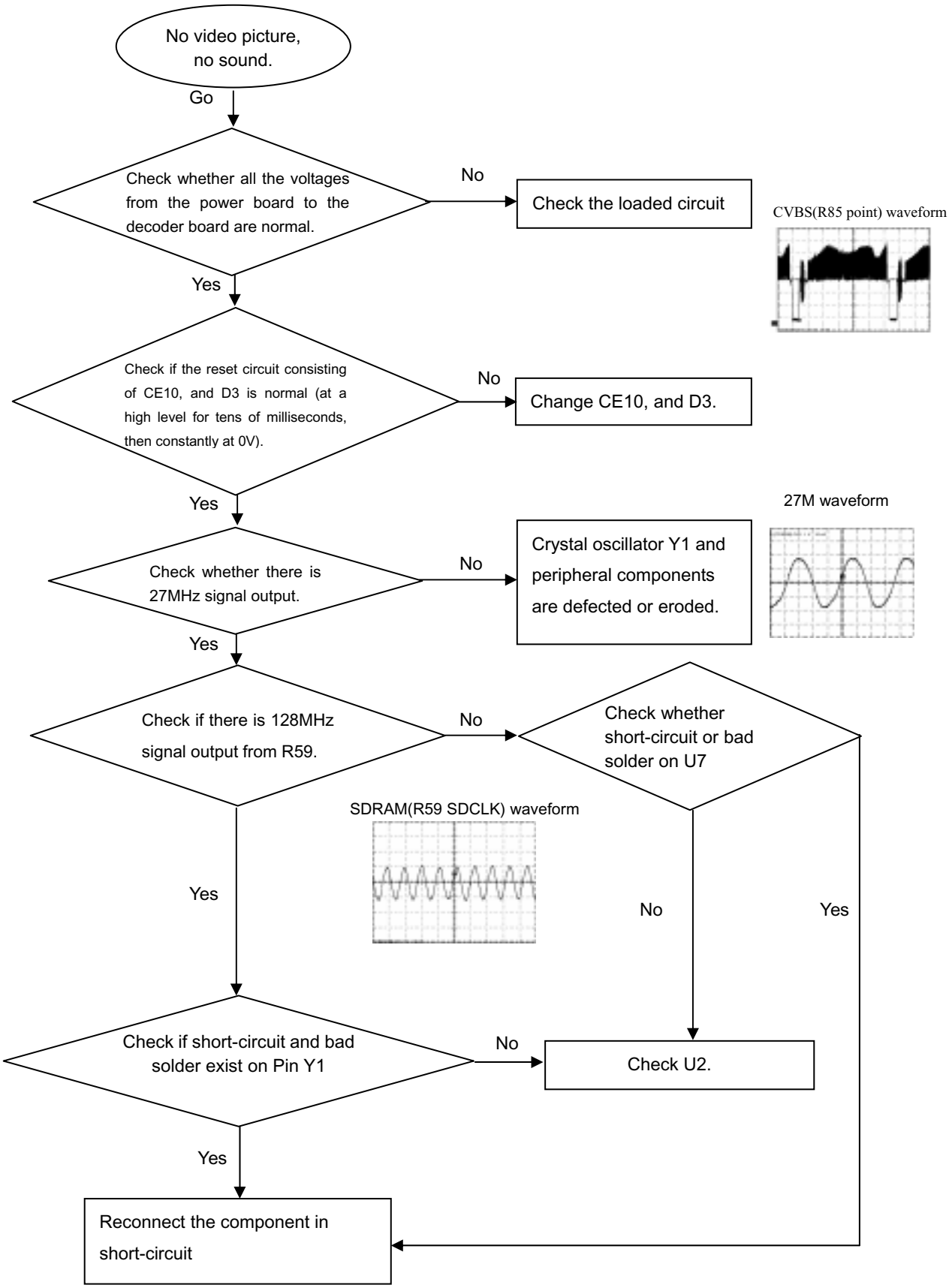
Remote reception is insensitive or fails.

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX


Remote reception is insensitive or fails.
Go
Check if the remote control works properly.
No
Check battery
Yes
Check if the power supply voltage to the remote censor is normal are normal.
No
Check R315、C315 on the front board
Yes
Use an oscilloscope to check if there is output waveform from the first pin IR of the remote censor after pressing button on the remote control.
No
Check the PIN 11 RC waveform of IC1 on the remote PCB
Yes
Check if there is IR signal on pin 109 of U2
Yes
Change U2
IR waveform
No
Correct connection

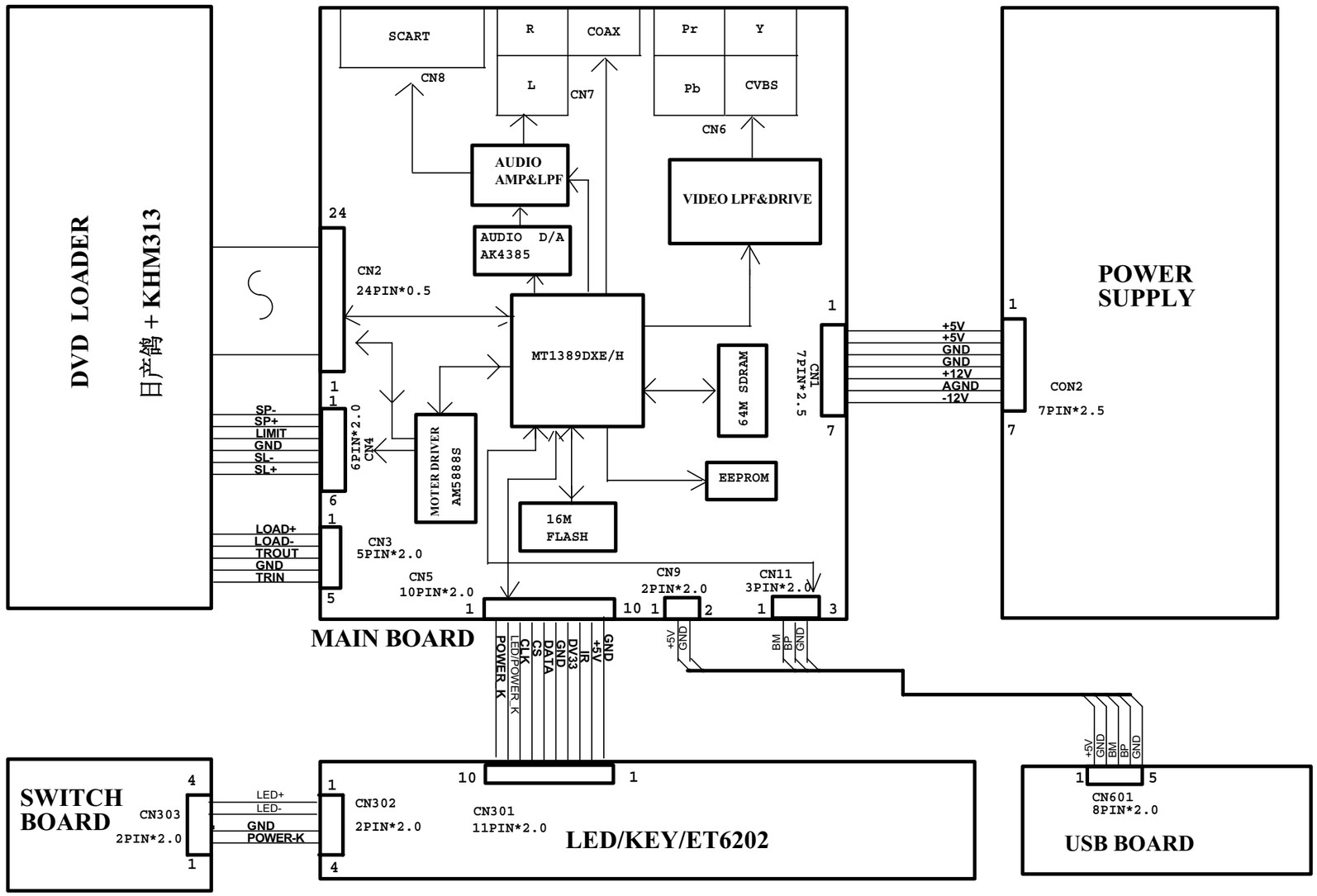
No video picture, no sound.

Remark: Trouble shooting chart for DVP5166K/XX, DVP5168K/XX


No video picture, no sound.
Go
Check whether all the voltages from the power board to the decoder board are normal.
No
Check the loaded circuit
CVBS(R85 point) waveform
Yes
Check if the reset circuit consisting of CE10, and D3 is normal (at a high level for tens of milliseconds, then constantly at 0V).
No
Change CE10, and D3.
Yes
27M waveform
Check whether there is 27MHz signal output.
No
Crystal oscillator Y1 and peripheral components are defected or eroded.
Yes
Check if there is 128MHz signal output from R59.
No
Check whether short-circuit or bad solder on U7
SDRAM(R59 SDCLK) waveform
Yes
No
Yes
Check if short-circuit and bad solder exist on Pin Y1
No
Check U2.
Yes
Reconnect the component in short-circuit

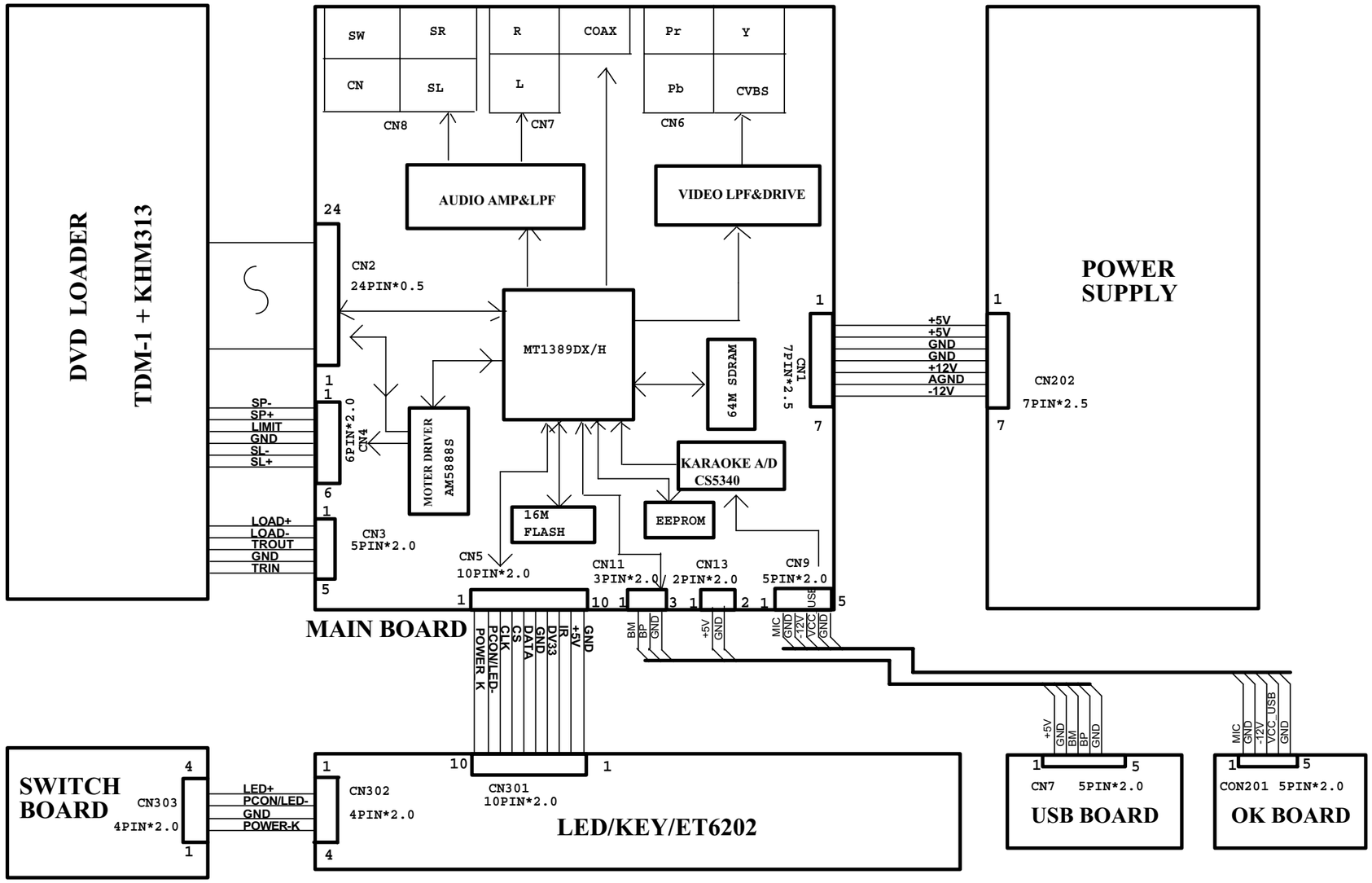
5-1

DVP5160/XX WIRING DIAGRAM



5-2

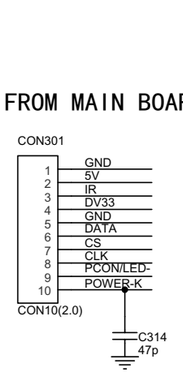
DVP5166K/XX, 5168K/XX WIRING DIAGRAM

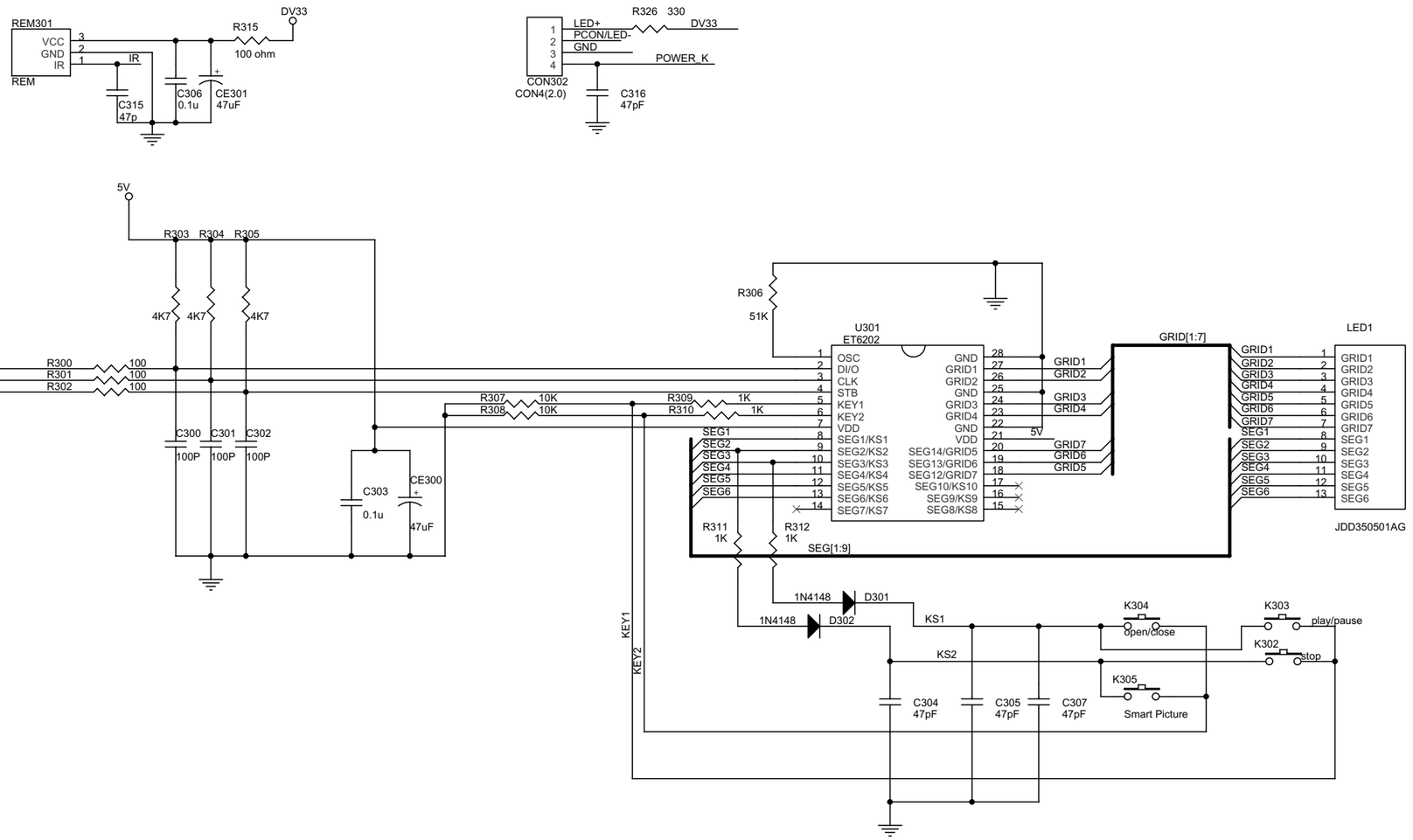


6-1

Front Board Electric Diagram for DVP5160/XX, DVP5166K/XX, DVP5168K/XX

FROM MAIN BOARD

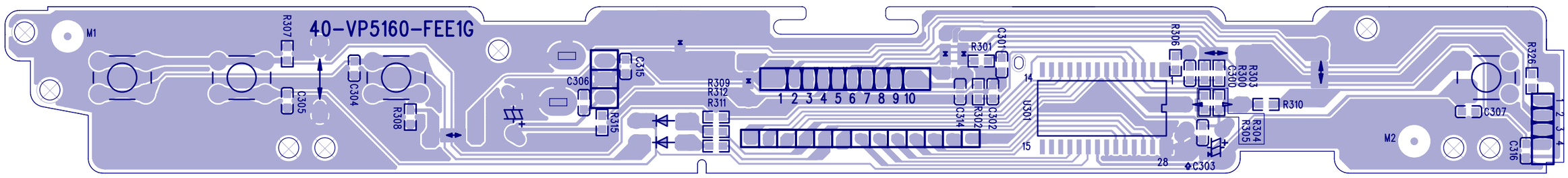




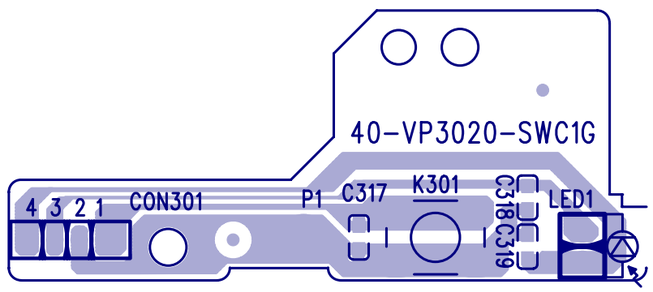
C306	A2
C303	B2
R309	B3
R310	B3
R311	B3
R312	B4
D302	C4
D301	C4
R303	B2
R304	B2
R305	B2
R307	B3
R308	B3
C304	C3
C305	C4
C307	C4
C316	A4
C315	A2
C314	B1
CE300	B3
CE301	A2
R306	B4
R315	A2
C300	B2
C301	B2
C302	B2
R300	B2
R301	B2
R302	B2
R326	A3
CON302	A3
CON301	A1
U301	B4
LED1	B5
REM301	A2
K305	C4
K304	C4
K303	C5
K302	C5

6-2

Front Board Print-Layout (Bottom Side) for DVP5160/XX, DVP5166K/XX, DVP5168K/XX

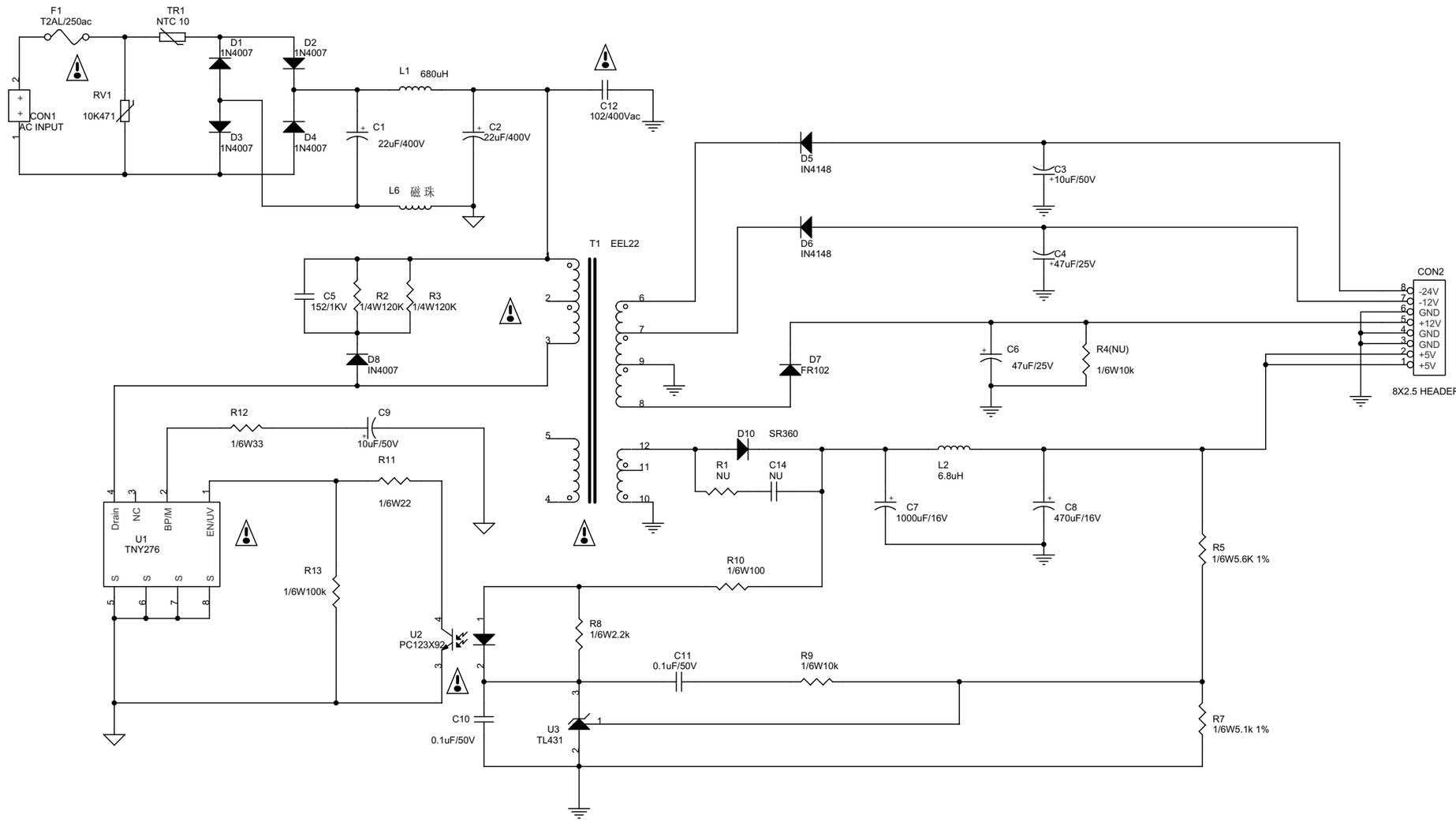


Switch Board Print-Layout (Bottom Side) for DVP5160/XX, DVP5166K/XX, DVP5168K/XX



6-3

Power Board Electric Diagram for DVP5160/XX, DVP5166K/98, DVP5168K/XX



C1	A1
C10	B1
C11	B2
C12	A2
C14	B2
C2	A1
C3	A3
C4	A3
C5	A1
C6	A2
C7	B2
C8	B3
C9	B1
CON1	A1
CON2	A3
D1	A1
D10	B2
D2	A1
D3	A1
D4	A1
D5	A2
D6	A2
D7	A2
D8	A1
F1	A1
L1	A1
L2	B2
L6	A1
R1	B2
R10	B2
R11	B1
R12	B1
R13	B1
R2	A1
R3	A1
R4	A3
R5	B3
R7	B3
R8	B2
R9	B2
RV1	A1
T1	A2
TR1	A1
U1	B1
U2	B1
U3	B2

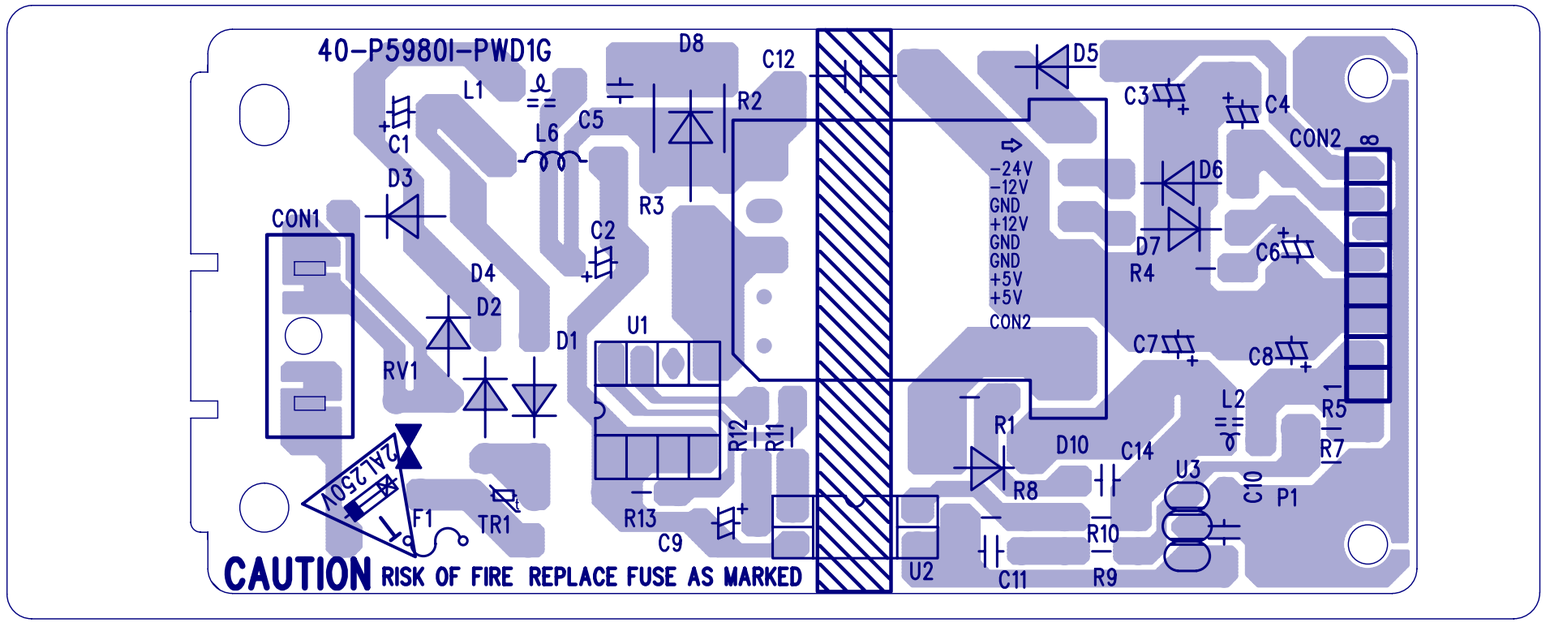
*** CAUTION :**

THE PARTS MARKED WITH ⚠ ARE IMPORTANT PARTS ON THE SAFETY.

PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

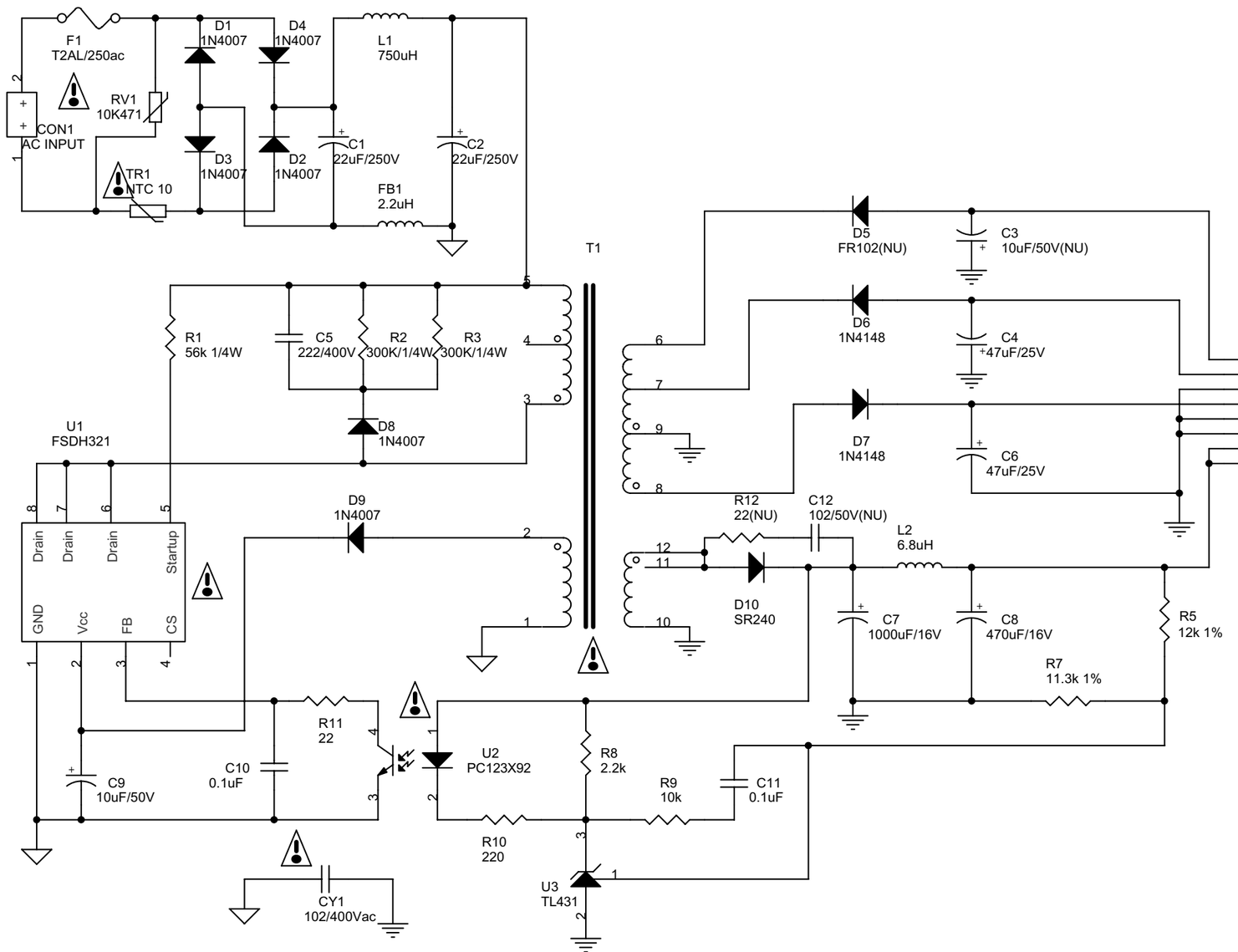
6-4

Power Board Print-Layout (Bottom Side) for DVP5160/XX, DVP5166K/98, DVP5168K/XX



6-5

Power Board Electric Diagram for DVP5166K/56/61

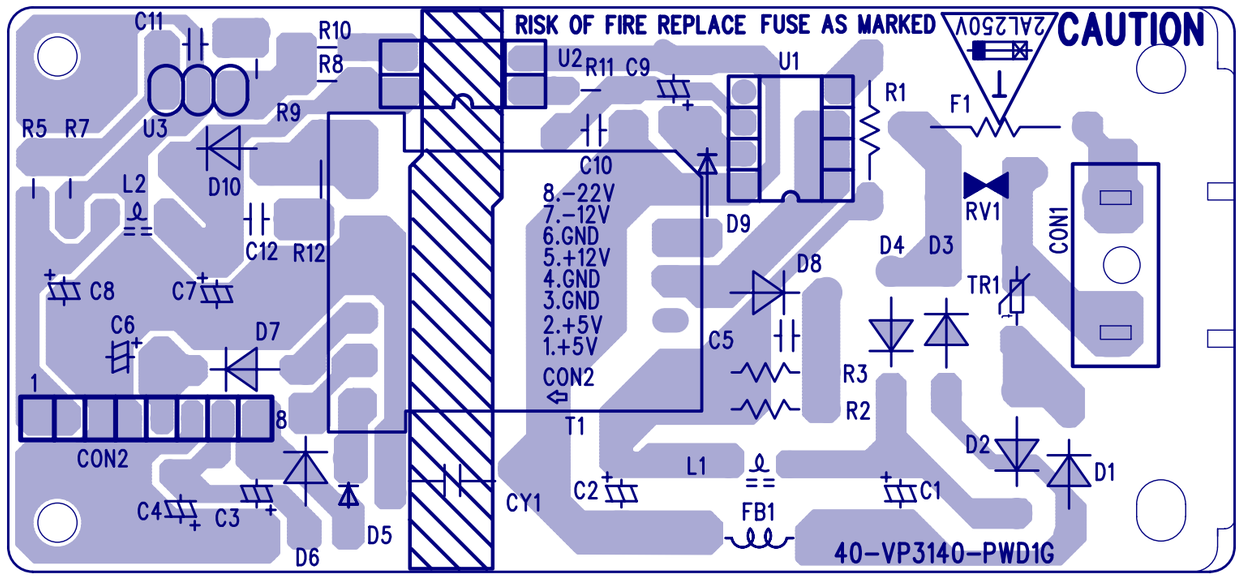


C1	B1
C10	A3
C11	C3
C12	C2
C2	B1
C3	C1
C4	C2
C5	A2
C6	C2
C7	C3
C8	C3
C9	A3
CON1	A1
CON2	D2
CY1	B4
D1	A1
D10	C3
D2	A1
D3	A1
D4	A1
D5	C1
D6	C2
D7	C2
D8	B2
D9	B2
F1	A1
FB1	B1
L1	B1
L2	C3
R1	A2
R10	B3
R11	A3
R12	C2
R2	B2
R3	B2
R5	D3
R7	D3
R8	B3
R9	B3
RV1	A1
T1	B2
TR1	A1
U1	A2
U2	B3
U3	B3

*** CAUTION :**
THE PARTS MARKED WITH ⚠ ARE IMPORTANT PARTS ON THE SAFETY.
PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

6-6

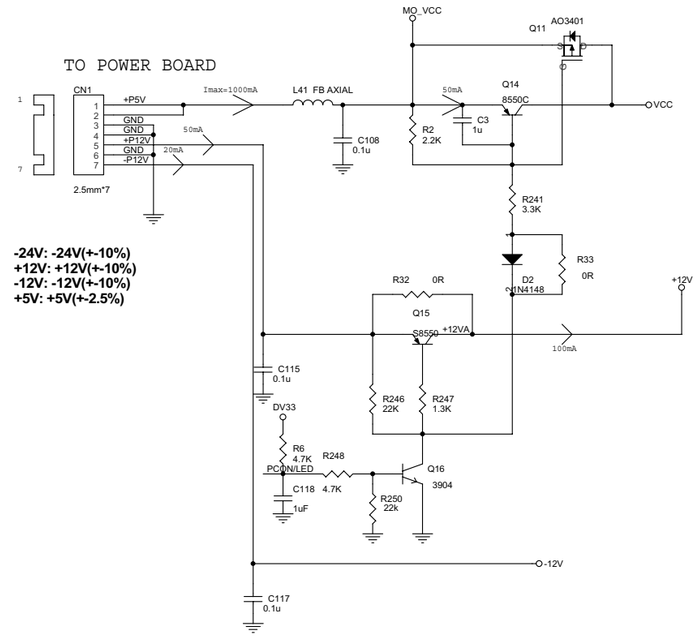
Power Board Print-Layout (Bottom Side) for DVP5166K/56/61



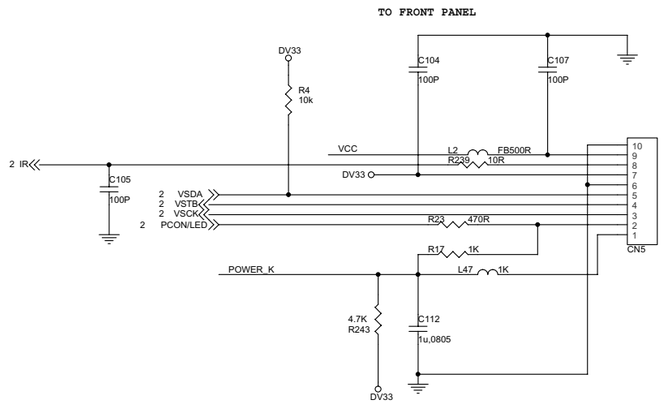
6-7

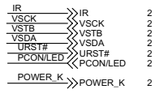
Main Board Electric Diagram for DVP5160/XX:POWER&CONNECTOR

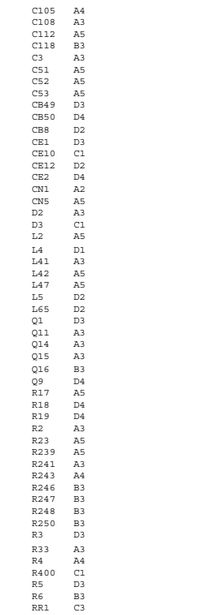
MT1389HD (LQFP256) DVD MP Board for SONY KHM313AAA



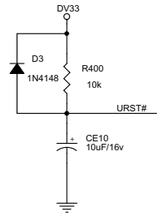
-24V: -24V(+-10%)
+12V: +12V(+-10%)
-12V: -12V(+-10%)
+5V: +5V(+-2.5%)

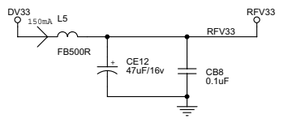


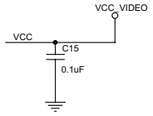


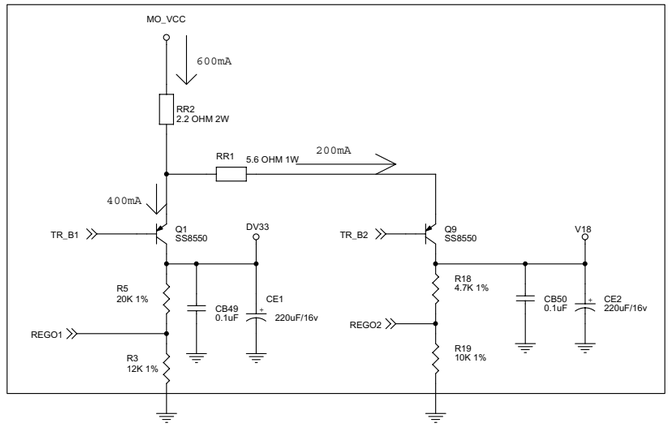


RESET Circuit



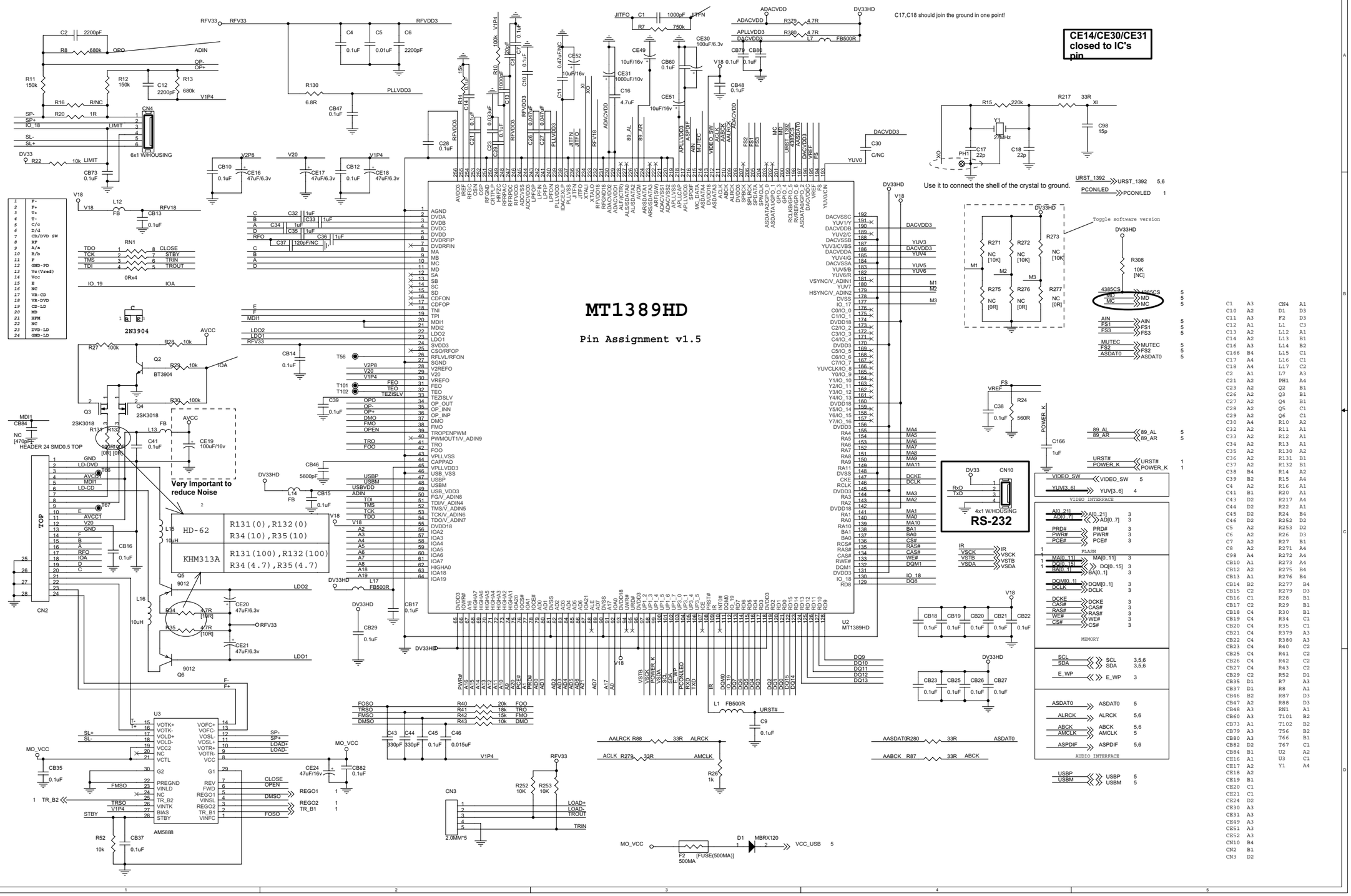






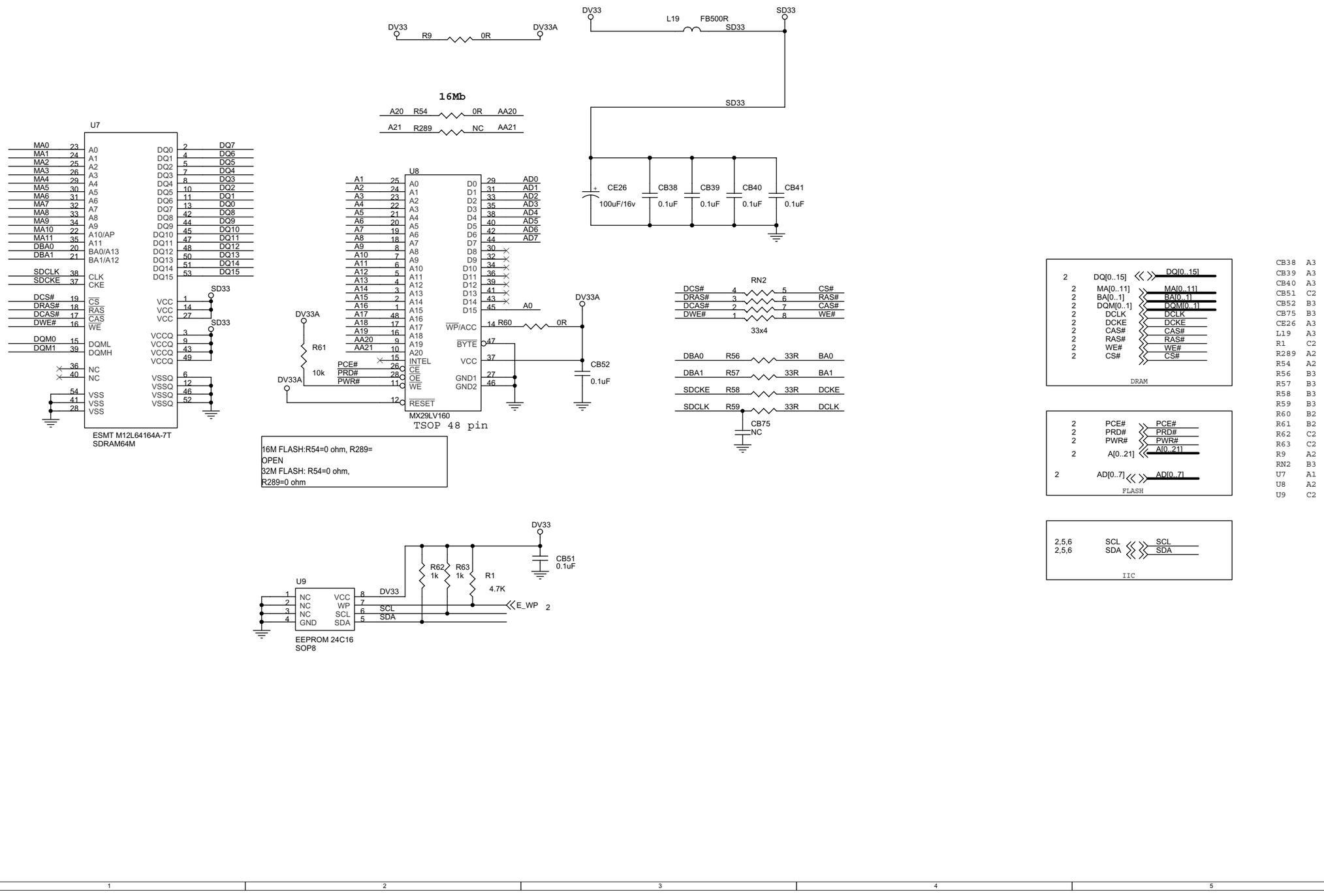
6-8

Main Board Electric Diagram for DVP5160/XX: MT1389HD&FRONTEND



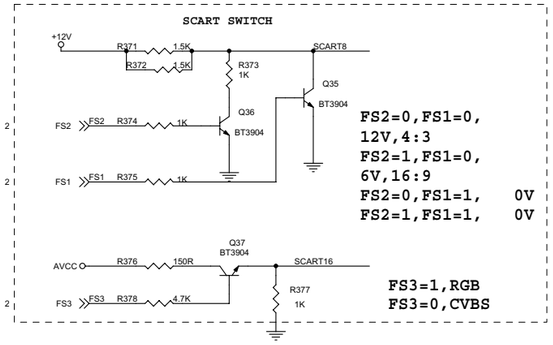
6-9

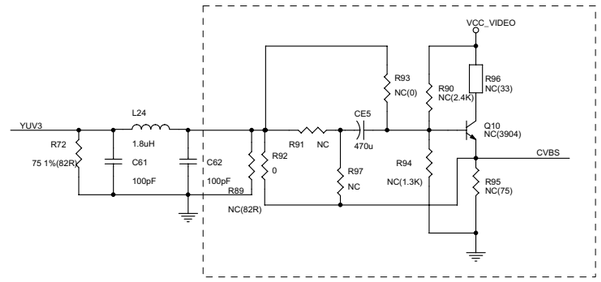
Main Board Electric Diagram for DVP5160/XX: SDRAM & FLASH

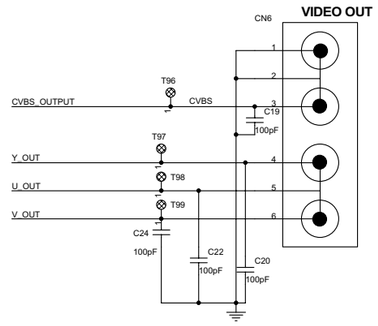


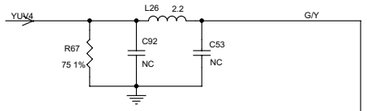
6-10

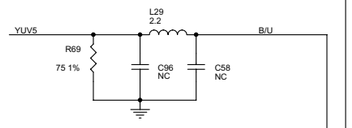
Main Board Electric Diagram for DVP5160/XX: VIDEO OUT

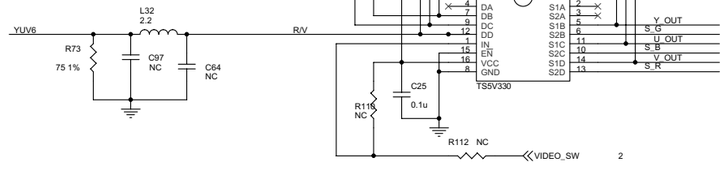


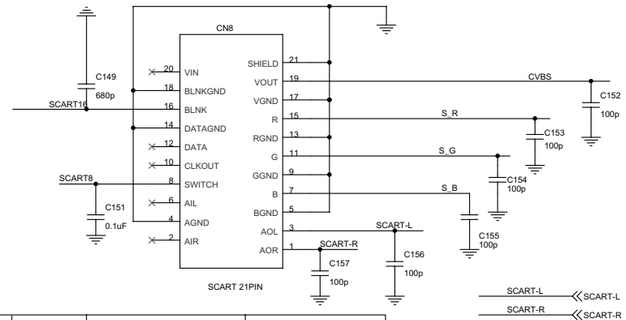








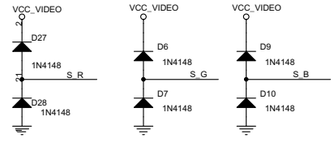




SCART-L <<SCART-L 2
SCART-R <<SCART-R 2

FS3	FS1	FS2	SCART8	SCART16
1	0	0	12V (9.5V - 12V 4:3)	3V (RGB)
1	0	1	6V (5V - 8V 16:9)	3V (RGB)
0				0V (CVBS)
	1		0V (TV MODE)	

When have no SCART, this inside of circle a piece is"OPEN"

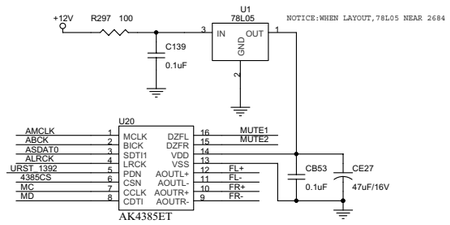


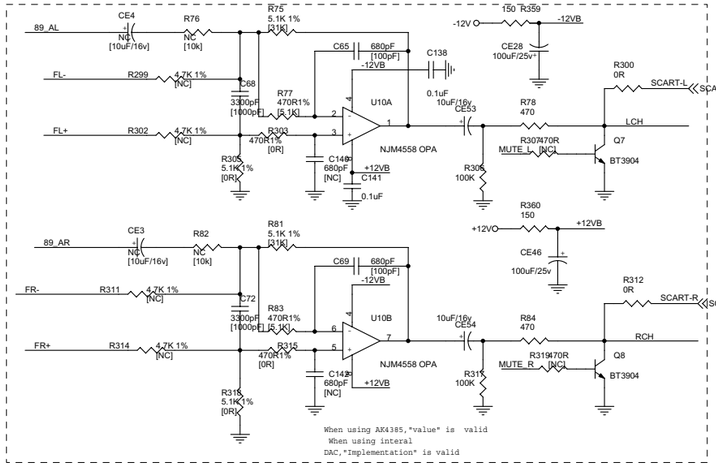
YUV[3..6] <<YUV[3..6] 2

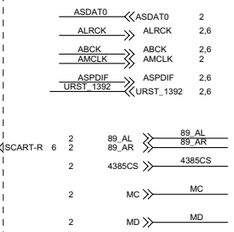
C151	C1	R119	C4
C25	C4	R120	C4
R92	A3	CN8	C1
R372	B1	U19	C4
R371	B1	CN6	A4
L24	A2	T96	A4
R373	B1	T97	A4
R374	B1	T98	A4
R375	B1	T99	A4
R377	B1		
D6	D2		
D7	D2		
D9	D3		
D10	D3		
L26	B3		
L29	C3		
L32	C3		
R378	B1		
R72	A2		
R67	B3		
R69	C3		
R73	C3		
C62	A3		
C61	A2		
C20	A4		
C24	A4		
C22	A4		
C19	A4		
C152	C2		
C153	C2		
C154	C2		
C155	C2		
C156	C2		
C157	C2		
R376	B1		
CE5	A3		
C149	C1		
Q35	B1		
Q36	B1		
Q37	B1		
R93	A3		
R94	A3		
R90	A3		
R96	A3		
R95	A3		
R89	A3		
Q10	A3		
C53	B3		
C58	C3		
C64	C3		
C92	B3		
C96	C3		
C97	C3		
D28	D2		
D27	D2		
R97	A3		
R91	A3		
R110	C3		
R112	C4		
R115	C4		

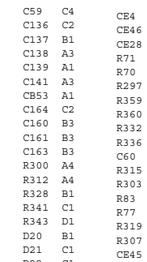
6-11

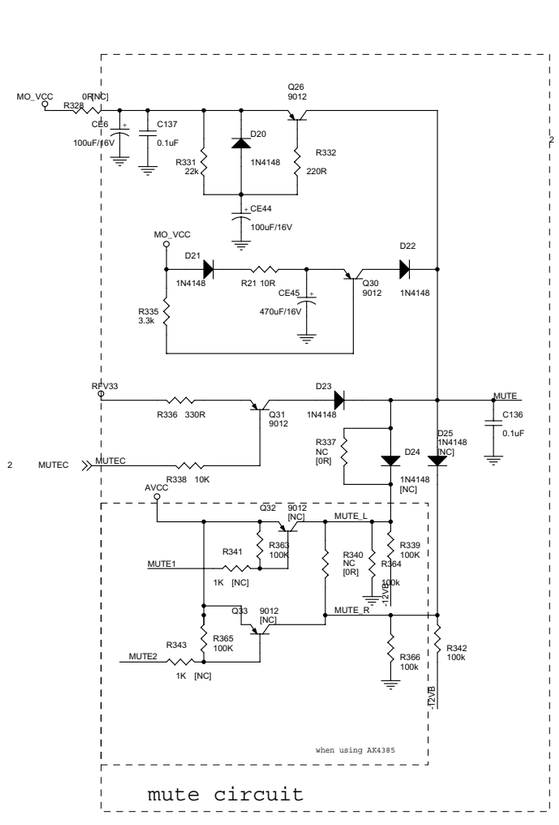
Main Board Electric Diagram for DVP5160/XX: AUDIO OUT & SCART

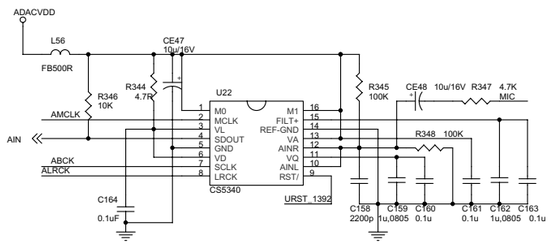


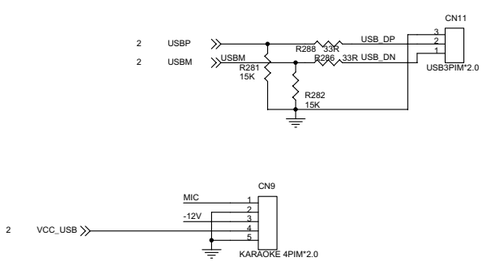


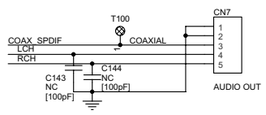


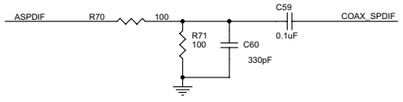






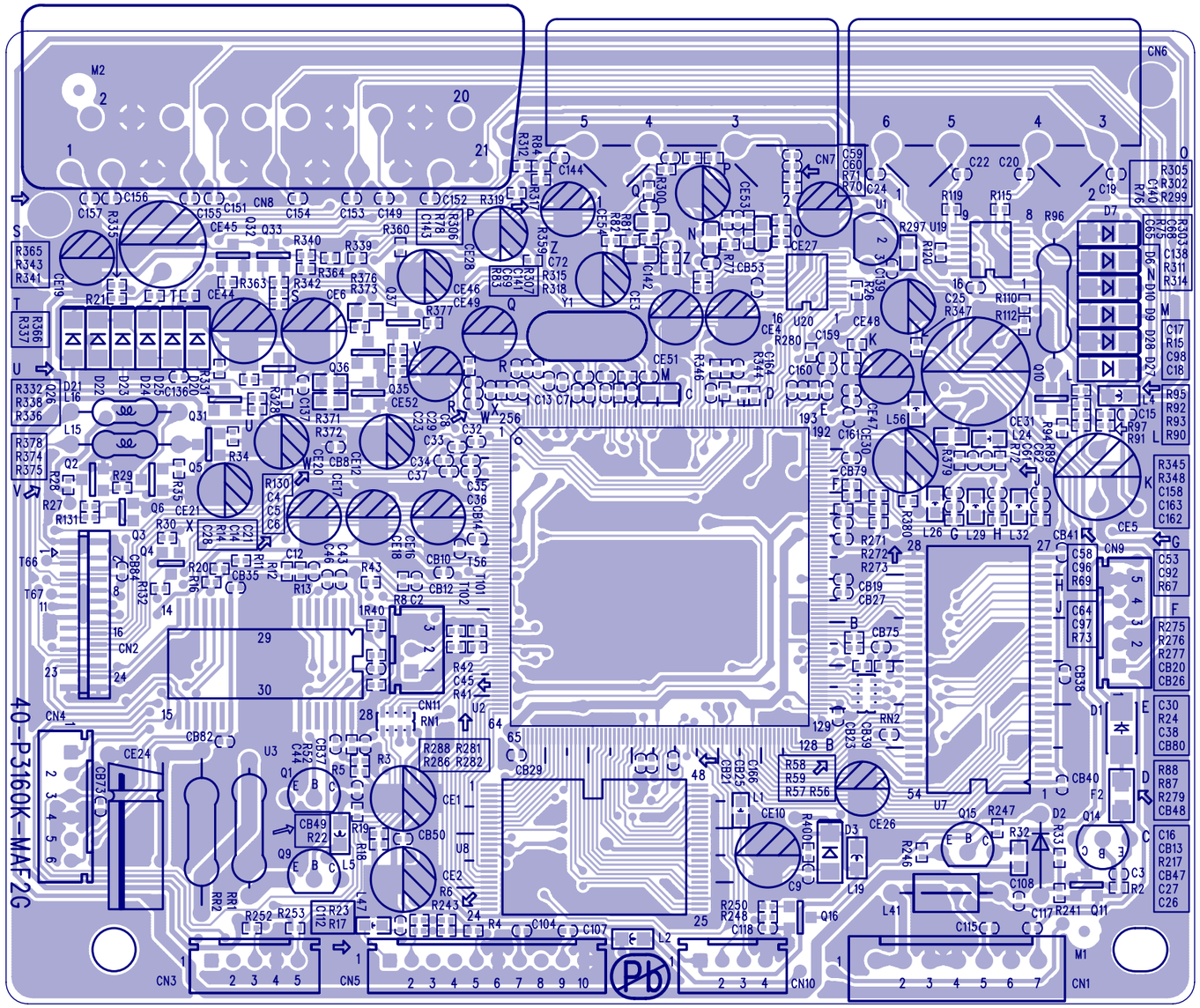






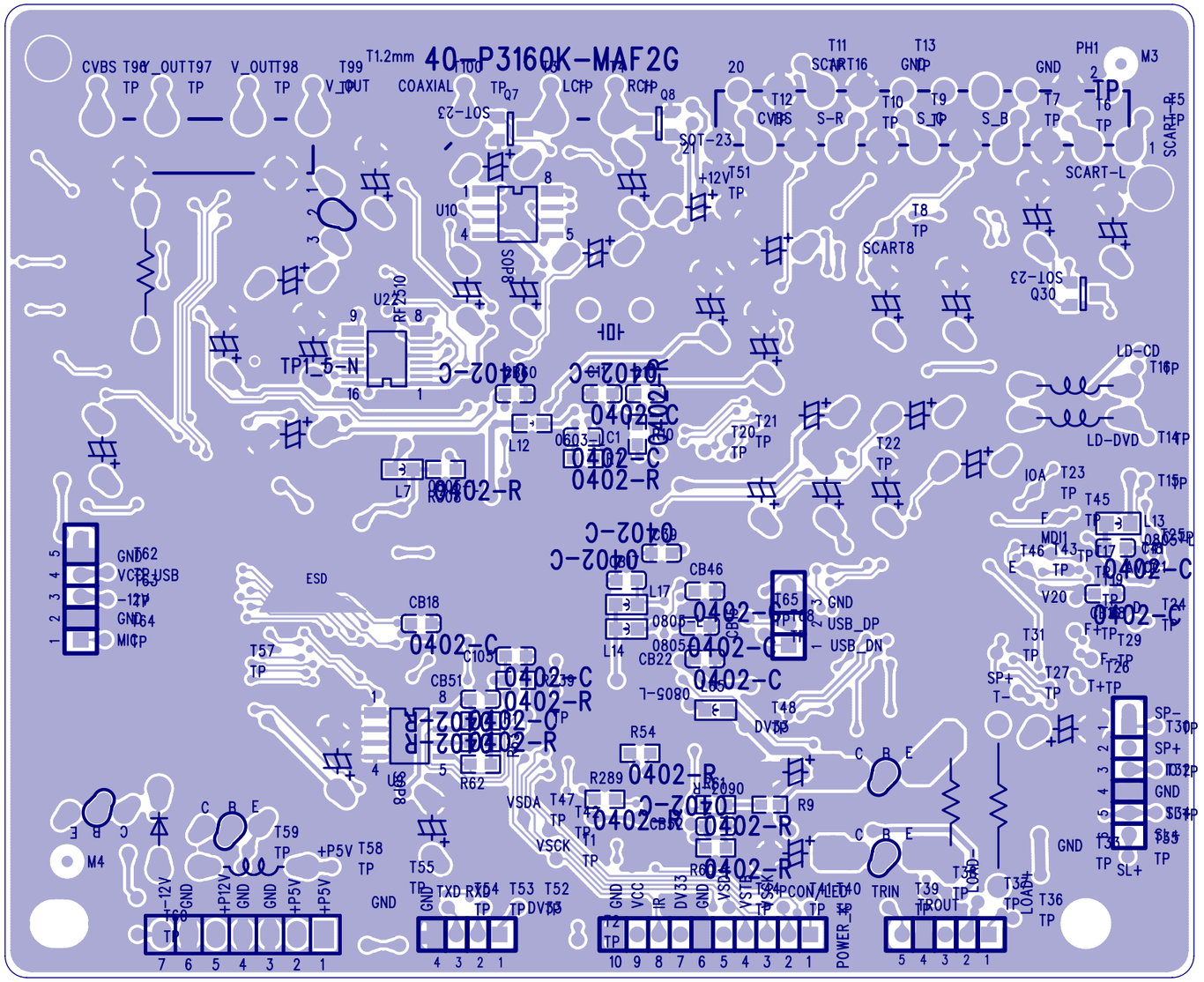
6-12

Main Board Print-Layout (Top Side) for DVP5160/XX



6-13

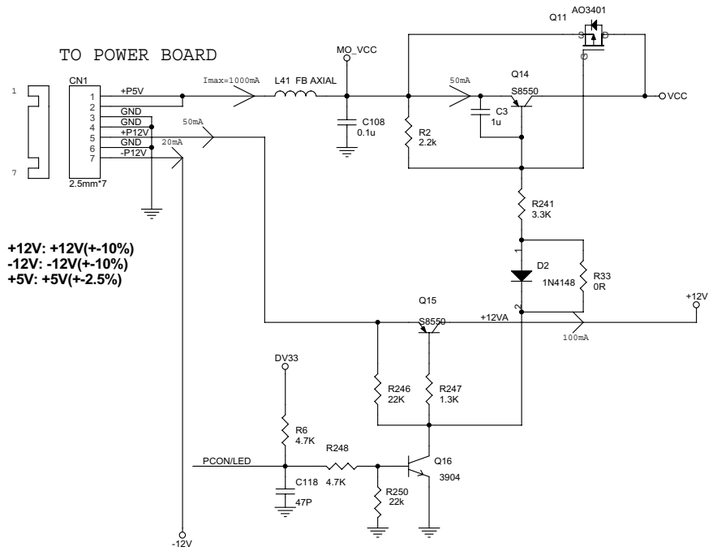
Main Board Print-Layout (Bottom Side) for DVP5160/XX

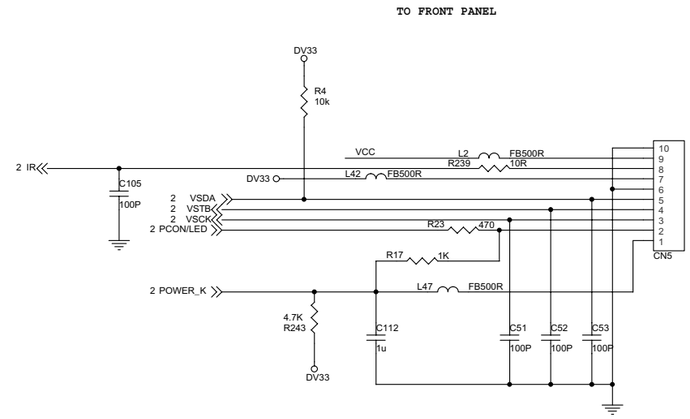


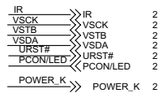
6-14

Main Board Electric Diagram for DVP5166K/XX,DVP5168K/XX: POWER&CONNECTOR

MT1389HD (LQFP256) DVD MP Board for SONY KHM313AAA

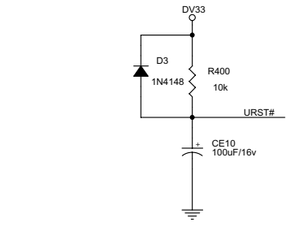


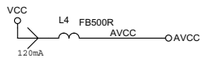


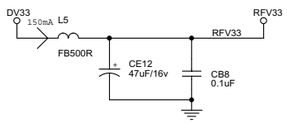


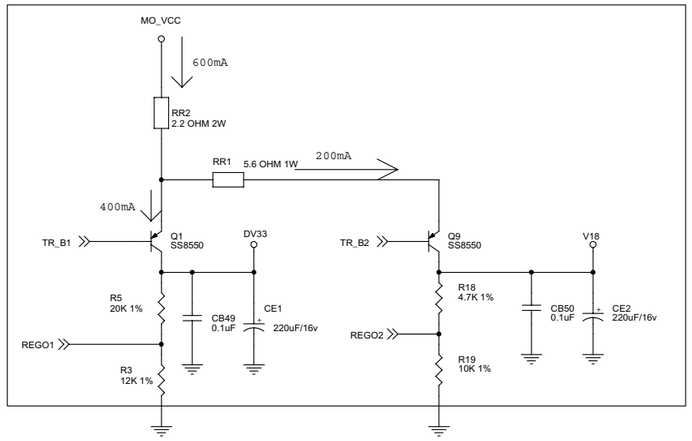
C105 A4
C108 A3
C112 A5
C118 B3
C3 A3
C51 A5
C52 A5
C53 A5
CB49 D3
CB50 D4
CB8 D2
CE1 D3
CE10 C1
CE12 D2
CE2 D4
CN1 A2
CN5 A5
D2 A3
D3 C1
L2 A5
L4 D1
L41 A3
L42 A5
L47 A5
L5 D2
L65 D2
Q1 D3
Q11 A3
Q14 A3
Q15 A3
Q16 B3
Q9 D4
R17 A5
R18 D4
R19 D4
R2 A3
R23 A5
R239 A5
R241 A3
R243 A4
R246 B3
R247 B3
R248 B3
R250 B3
R3 D3
R33 A3
R4 A4
R400 C1
R5 D3
R6 B3
RR1 C3
RR2 C3

RESET Circuit



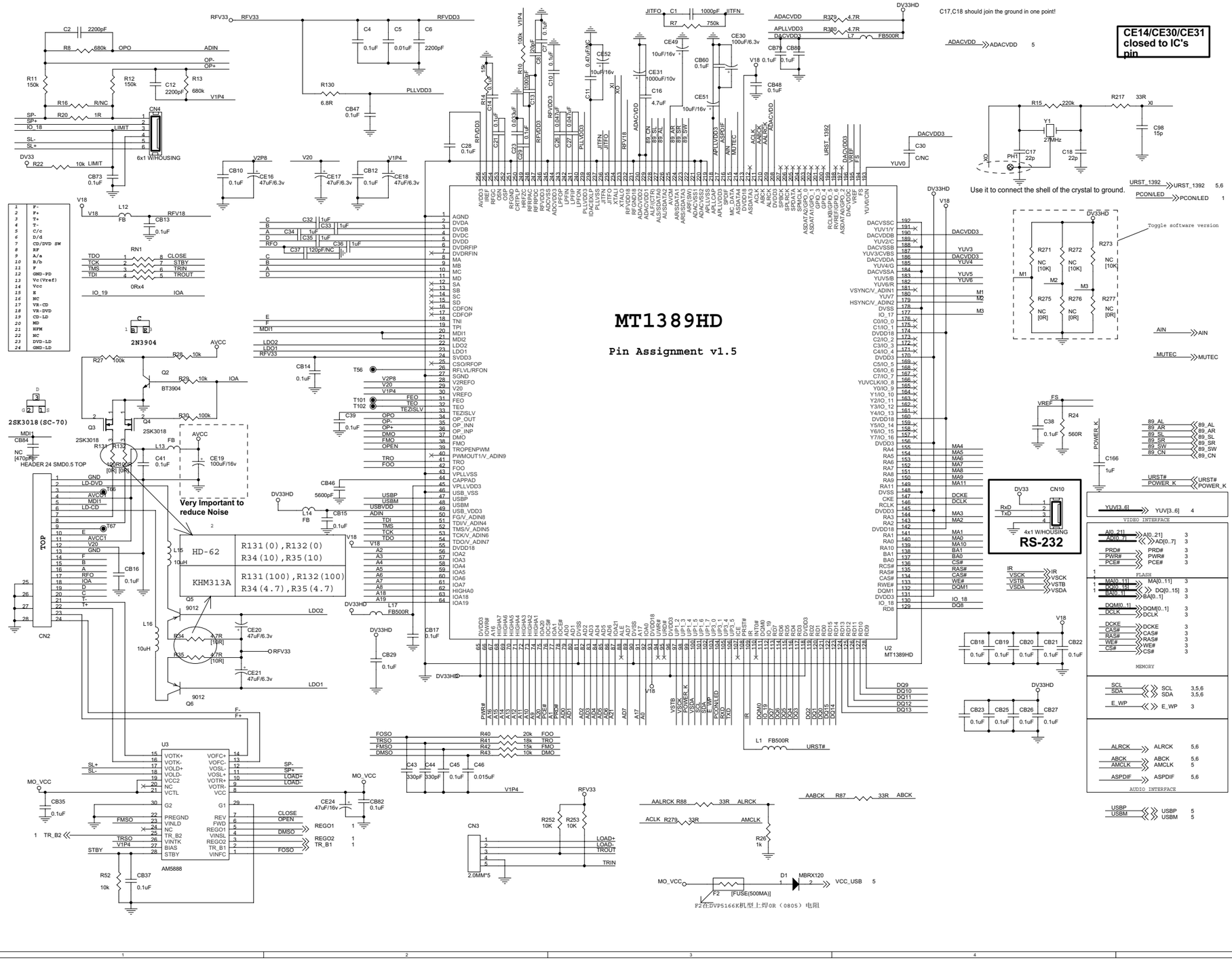






6-15

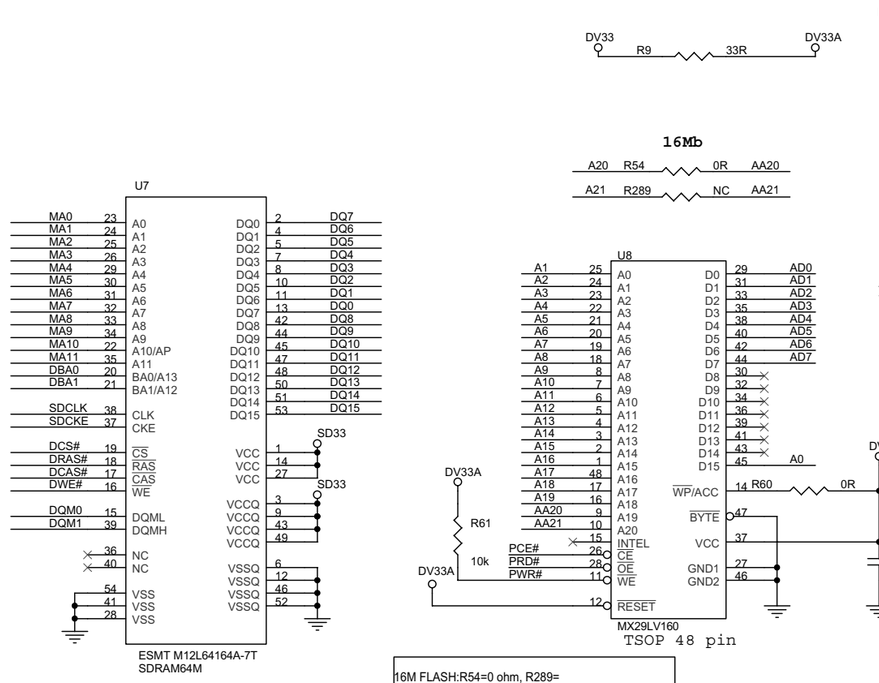
Main Board Electric Diagram for DVP5166K/XX,DVP5168K/XX: MT1389HD&FRONTEND



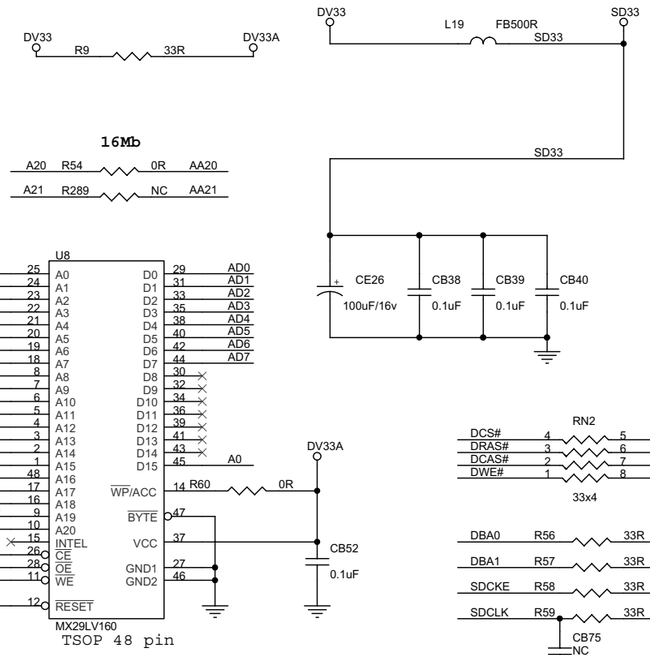
C1	A3	CN4	A1
C10	A2	D1	D3
C11	A3	F2	D3
C12	A1	L1	C3
C13	A2	L12	A1
C14	A2	L13	B1
C16	A3	L14	B2
C166	B4	L15	C1
C17	A4	L16	C1
C18	A4	L17	C2
C2	A1	L7	A3
C21	A2	PH1	A4
C23	A2	Q2	B1
C26	A2	Q3	B1
C27	A2	Q4	B1
C28	A2	Q5	C1
C29	A2	Q6	C1
C30	A4	R10	A2
C32	A2	R11	A1
C33	A2	R12	A1
C34	A2	R13	A1
C35	A2	R130	A2
C36	A2	R131	B1
C37	A2	R132	B1
C38	B4	R14	A2
C39	B2	R15	A4
C4	A2	R16	A1
C41	B1	R20	A1
C43	D2	R217	A4
C44	D2	R22	A1
C45	D2	R24	B4
C46	D2	R252	D2
C5	A2	R253	D2
C6	A2	R26	D3
C7	A2	R27	B1
C8	A2	R271	A4
C98	A4	R272	A4
CB10	A1	R273	A4
CB12	A2	R275	B4
CB13	A1	R276	B4
CB14	B2	R277	B4
CB15	C2	R279	D3
CB16	C1	R28	B1
CB17	C2	R29	B1
CB18	C4	R30	B1
CB19	C4	R34	C1
CB20	C4	R35	C1
CB21	C4	R379	A3
CB22	C4	R380	A3
CB23	C4	R40	C2
CB25	C4	R41	C2
CB26	C4	R42	C2
CB27	C4	R43	C2
CB29	C2	R52	D1
CB35	D1	R7	A3
CB37	D1	R8	A1
CB46	B2	R87	D3
CB47	A2	R88	D3
CB48	A3	RN1	A1
CB60	A3	T101	B2
CB73	A1	T102	B2
CB79	A3	T56	B1
CB80	A3	T66	B1
CB82	D2	T67	C1
CB84	B1	U2	A2
CE16	A1	U3	C1
CE17	A2	Y1	A4
CE18	A2		
CE19	B1		
CE20	C1		
CE21	C1		
CE24	D2		
CE30	A3		
CE31	A3		
CE49	A3		
CE51	A3		
CE52	A3		
CN10	B4		
CN2	B1		
CN3	D2		

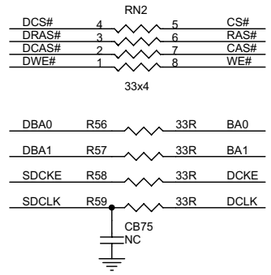
6-16

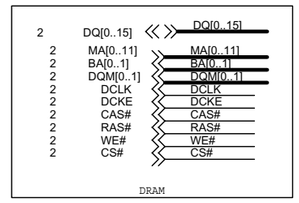
Main Board Electric Diagram for DVP5166K/XX,DVP5168K/XX: SDRAM & FLASH


U7
MA0 MA1 MA2 MA3 MA4 MA5 MA6 MA7 MA8 MA9 MA10 MA11 DBA0 DBA1
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10/AP A11 BA0/A13 BA1/A12
SDCLK SDCKE
CLK CKE
DCS# DRAS# DCAS# DWE#
CS RAS CAS WE
DQM0 DQM1
DQML DQMH
NC NC
VSS VSS VSS
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15
VCC VCC VCC
VCCQ VCCQ VCCQ VCCQ
VSSQ VSSQ VSSQ VSSQ
SD33
ESMT M12L64164A-7T
SDRAM64M

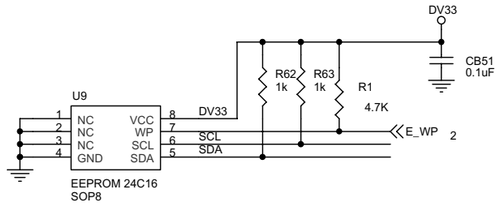
DV33A
R61
10k
PCE# PRD# PWR#
U8
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 AA20 AA21
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20
INTEL CE OE WE RESET
D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15
AD0 AD1 AD2 AD3 AD4 AD5 AD6 AD7
WP/ACC BYTE VCC GND1 GND2
A0
R60 0R
CB52 0.1uF
MX29LV160
TSOP 48 pin







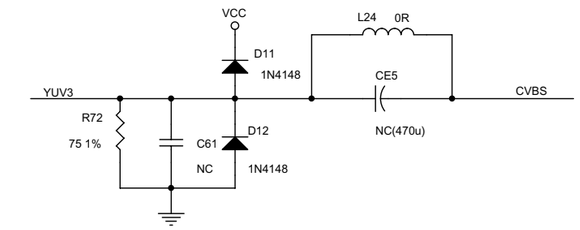
16M FLASH:R54=0 ohm, R289=
OPEN
32M FLASH: R54=0 ohm,
R289=0 ohm

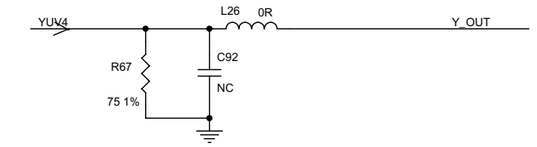


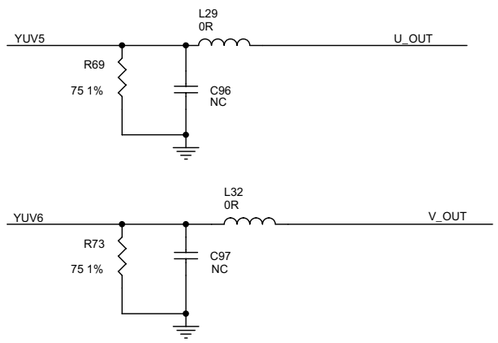
CB38	A3
CB39	A3
CB40	A3
CB51	C2
CB52	B3
CB75	B3
CE26	A3
L19	A3
R1	C2
R289	A2
R54	A2
R56	B3
R57	B3
R58	B3
R59	B3
R60	B2
R61	B2
R62	C2
R63	C2
R9	A2
RN2	B3
U7	A1
U8	A2
U9	C2

6-17

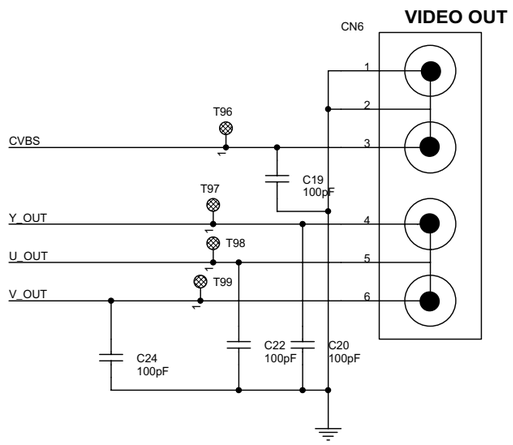
Main Board Electric Diagram for DVP5166K/XX,DVP5168K/XX: VIDEO OUT

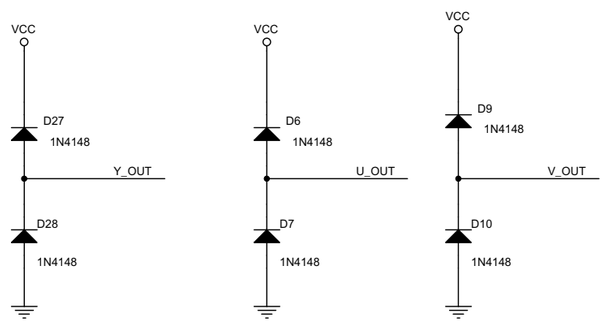






2

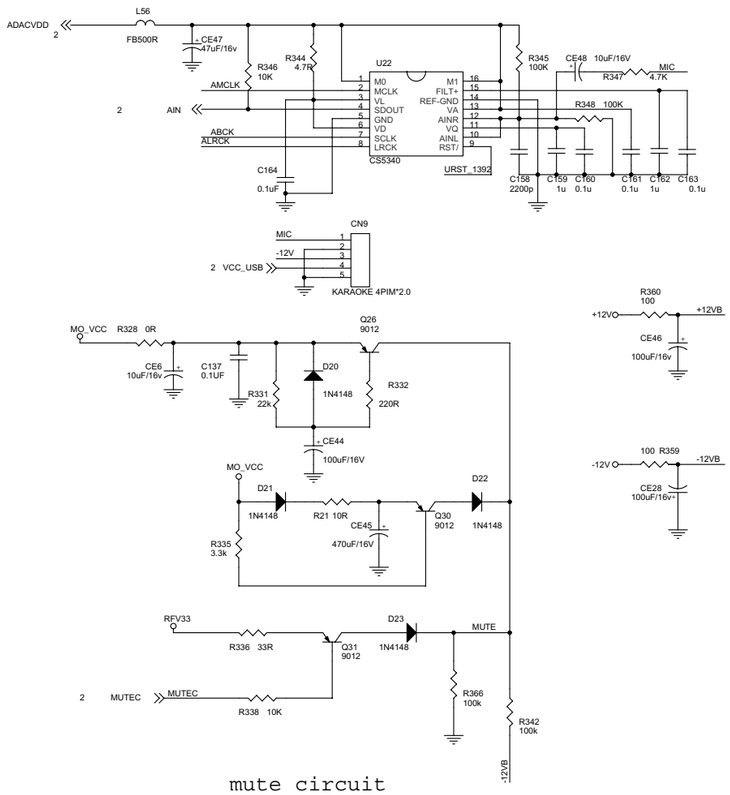




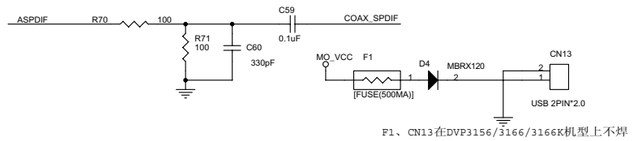
L24	A2
L26	B2
L29	B2
L32	C2
D6	B3
D7	C3
D9	B4
D10	C4
D11	A2
D12	A2
D27	B3
D28	C3
R69	B1
R72	A1
R73	C1
R67	B1
C19	A3
C20	B3
C22	B3
C24	B3
CE5	A2
C61	A2
C92	B2
C96	B2
C97	C2
CN6	A4
T96	A3
T97	A3
T98	B3
T99	B3

6-18

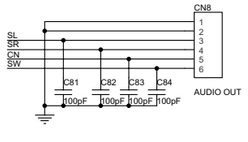
Main Board Electric Diagram for DVP5166K/XX,DVP5168K/XX: AUDIO OUT

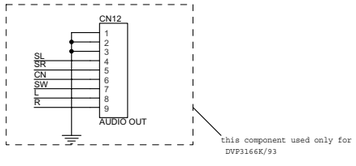


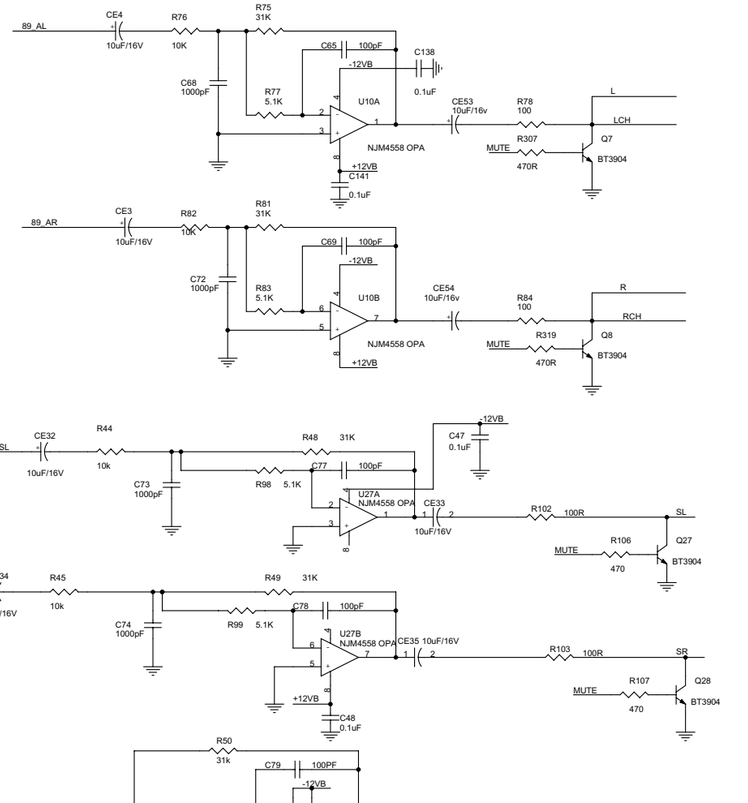
mute circuit



F1、CN13在DVP3156/3166/3166K机型上不焊



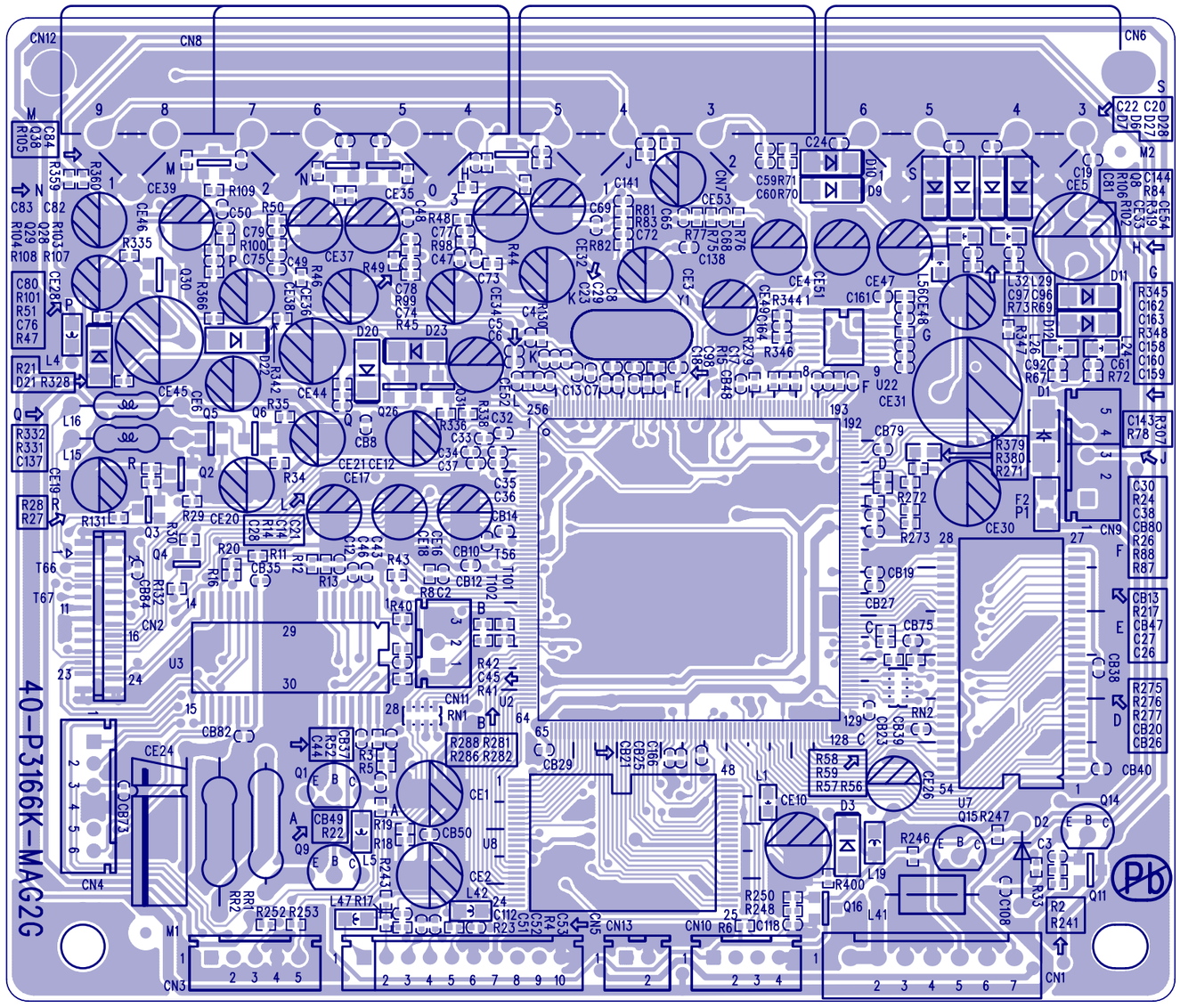




C137	A1	R307	A4
C138	A3	R319	A4
C141	A3	R328	A1
C143	C1	R331	B1
C144	C1	R332	B1
C158	A2	R335	B1
C159	A2	R336	B1
C160	A2	R338	B1
C161	A2	R342	B2
C162	A2	R344	A1
C163	A2	R345	A2
C164	A1	R346	A1
C48	B3	R347	A2
C49	C3	R348	A2
C50	C3	R359	B2
C59	C1	R360	A2
C60	C1	R366	B2
C65	A3	R44	B3
C68	A3	R45	B2
C69	A3	R46	C3
C72	A3	R47	C3
C73	B3	R48	B3
C74	B3	R49	B3
C75	C3	R50	B3
C76	C3	R51	C3
C77	B3	R70	C1
C78	B3	R71	C1
C79	B3	R75	A3
C80	D1	R76	A4
C81	D1	R77	A3
C82	D1	R78	A3
C83	D1	R81	A3
C84	D1	R82	A3
CE28	B2	R83	A3
CE3	A3	R84	A4
CE32	B2	R98	B3
CE33	B3	R99	B3
CE34	B2	T100	C1
CE35	B3	U10A	A3
CE36	C2	U10B	A3
CE37	C3	U22	A1
CE38	C2	U27A	B3
CE39	C3	U27B	B3
CE4	A3	U28A	C3
CE44	B1	U28B	C3
CE45	B1		
CE46	A2		
CE47	A1		
CE48	A2		
CE53	A3		
CE54	A3		
CE6	A1		
CN11	C2		
CN12	D2		
CN13	C2		
CN7	C1		
CN8	D1		
D20	A1		
D21	B1		
D22	A1		
D23	B1		
D4	C2		
F1	C2		
L56	A1		
Q26	A1		
Q27	B4		
Q28	B4		
Q29	C4		
Q30	B1		
Q31	B1		
Q38	C4		
Q7	A4		
Q8	A4		
R100	C3		
R101	C3		
R102	B4		
R103	B4		
R104	C4		
R105	C4		
R106	B4		
R107	B4		
R108	C4		
R109	C4		
R21	B1		
R281	C2		
R282	C2		
R286	C2		
R288	C2		

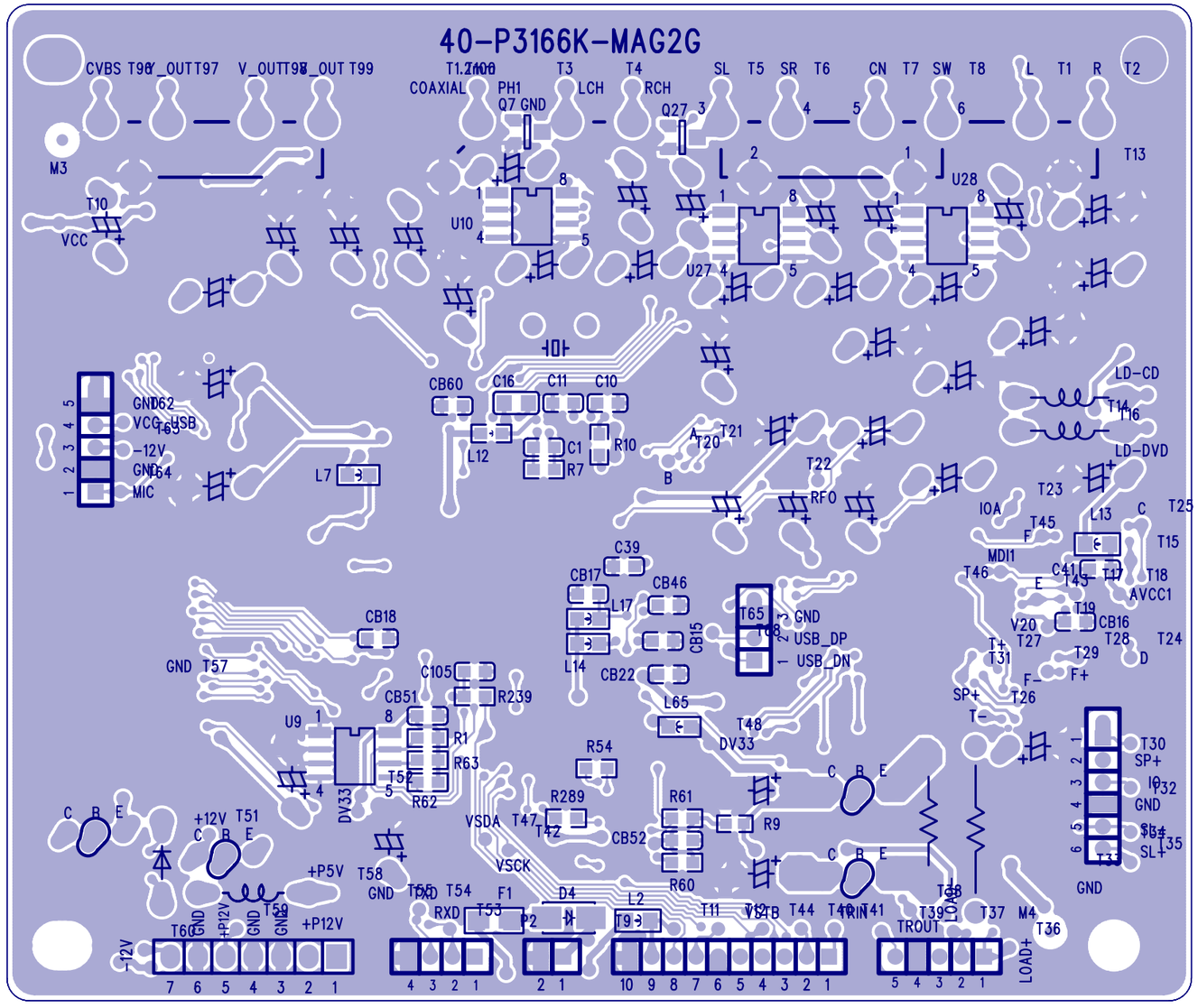
6-19

Main Board Print-Layout (Top Side) for DVP5166K/XX,DVP5168K/XX

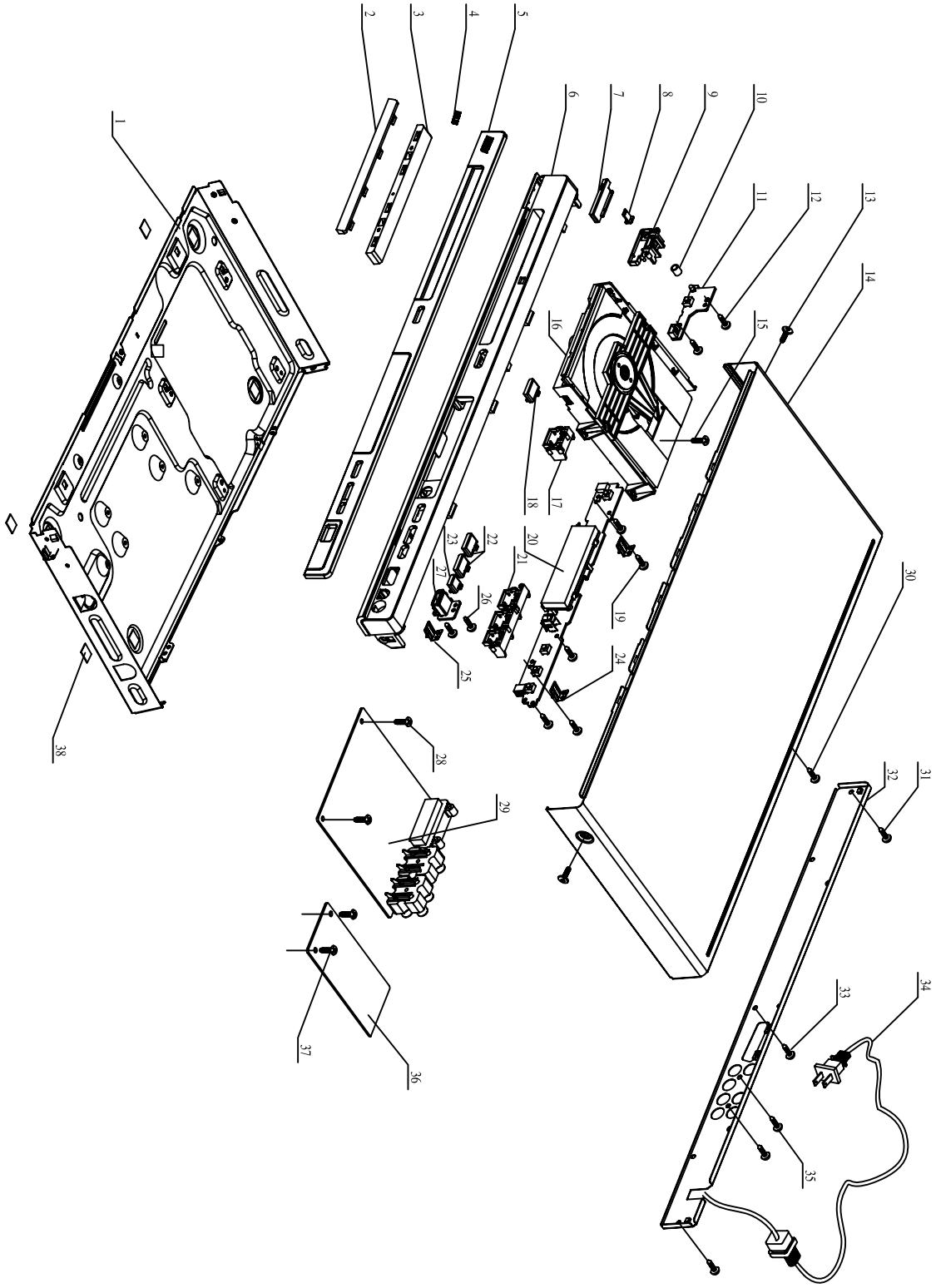


6-20

Main Board Print-Layout (Bottom Side) for DVP5166K/XX,DVP5168K/XX



DVP5160/XX Mechanical Exploded View



Remark:
Ass'y1 is the assembled component for location 2,3
Ass'y2 is the assembled compoient for location 4,5,6,7,8,9,17,18,21,22,23

It's a general Mechanical Exploded View for DVP5160/XX, Detailed information please refer to Model set.

ENCASING & ACCESSORIES PARTS LIST

No	12NC No.	Part Name	Q'ty
1	996510001539	Bottom Cabinet	1
Ass'y1	/	Front Door Ass'y	1
Ass'y2	/	Front Panel Ass'y	1
10	/	LED Supporter	1
11	996500034178	Ass'y-Switch Board	1
14	996510001540	Top cover	1
16	996500034190	Loader	1
20	996510001523	Ass'y- Front Board	1
24	/	Earthing Plate	1
25	/	Earthing Plate	1
27	996510001525	Ass'y - USB Board	1
29	/	Ass'y-Main Board	1
32	/	Rear Cabinet	1
34	/	Power Cord for DVP5160/05	1
	/	Power Cord for DVP5160/12	
36	/	Ass'y-Power Board	1
38	/	PAD	4

Accessory

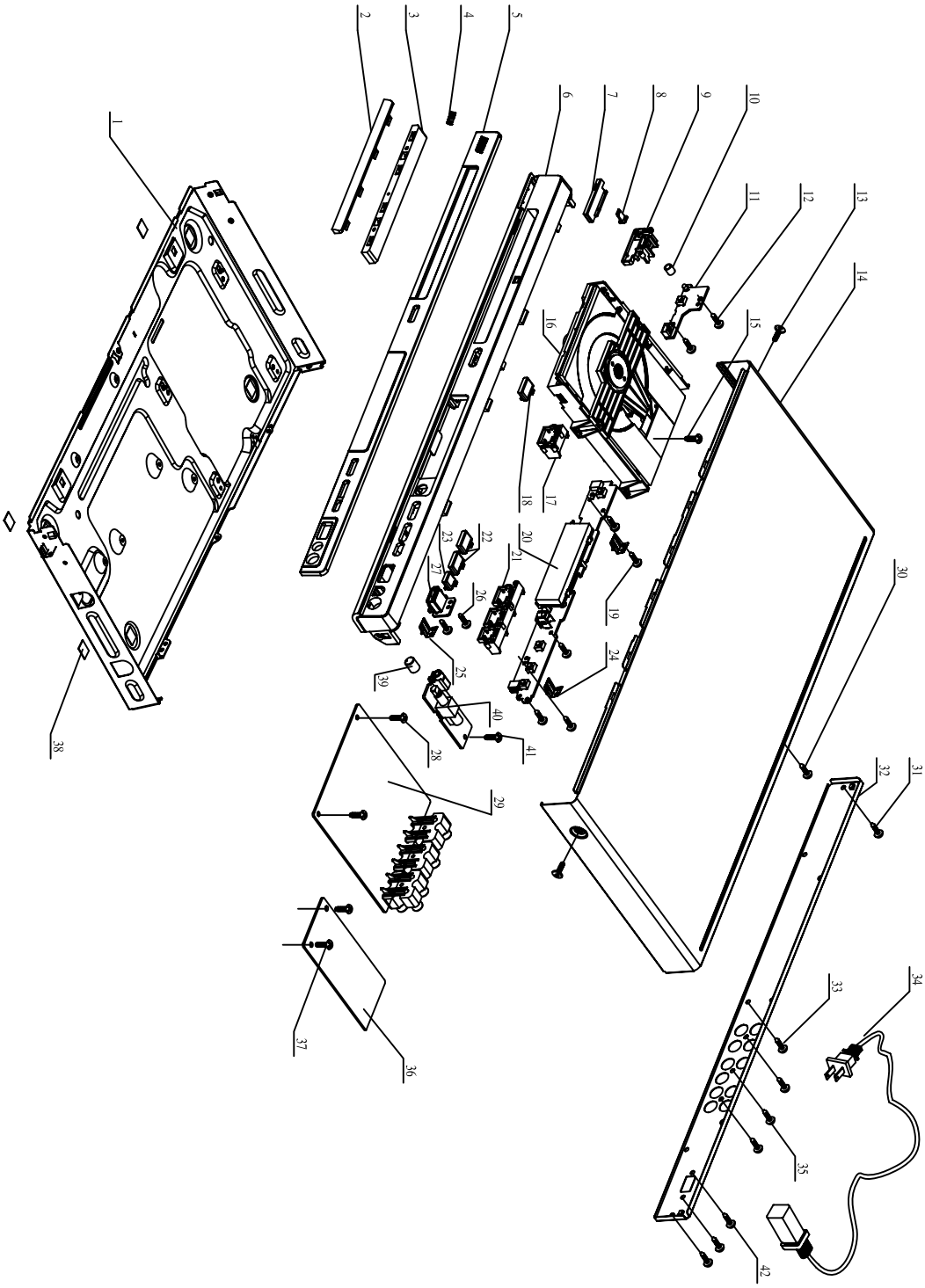
RC	996500035359	REMOTE CONTROL	1

SCREW LIST

No	12NC No.	Part Name	Q'ty
12	/	S/T Screw B 2.6 X 8 BF	2
13	/	M/C Screw Triangle W 3 X 6	2
15	/	Machine Screw	1
19	/	S/T Screw B 2.6 X 8 BF	5
26	/	Triangle M/C Screw B 3 X 6	2
28	/	Triangle M/C Screw B 3 X 6	2
30	/	Triangle M/C Screw B 3 X 6	1
31	/	Triangle M/C Screw B 3 X 6	2
33	/	Triangle M/C Screw B 3 X 6	1
35	/	S/T Screw B 3 X 8 BF	2
37	/	Triangle M/C Screw B 3 X 6	2

Note:Only the parts mentioned in this list are normal service spare parts

DVP5166K/XX Mechanical Exploded View



Remark:
Ass'y1 is the assembled component for location 2,3
Ass'y2 is the assembled compoient for location 4,5,6,7,8,9,17,18,21,22,23

It's a general Mechanical Exploded View for DVP5166K/XX, Detailed information please refer to Model set.

ENCASING & ACCESSORIES PARTS LIST

No	12NC No.	Part Name	Q'ty
1	996510001539	Bottom Cabinet	1
Ass'y1	996510001535	Front Door Ass'y	1
Ass'y2	996510001536	Front Panel Ass'y	1
10	/	LED Supporter	1
11	996500034178	Ass'y-Switch Board	1
14	996510001540	Top cover	1
16	996500034190	Loader	1
20	996510001523	Ass'y- Front Board	1
24	/	ESD Washer	1
25	/	Earthing Plate	1
27	996510001525	Ass'y - USB Board	1
29	996510001521	Ass'y-Main Board	1
32	/	Rear Cabinet for DVP5166K/56	1
	/	Rear Cabinet for DVP5166K/98	
34	996510001537	Power Cord for DVP5166K/98	1
	996510001179	Power Cord for DVP5166K/56	
36	996510002231	Ass'y-Power Board for DVP5166K/56	1
	996510001522	Ass'y-Power Board for DVP5166K/98	
38	/	PAD	4
39	/	Knob	1
40	996510001524	Ass'y-OK Board	1

Accessory

AV Cable	996510001106	VIDEO CABLE 1500mm	1
RC	996500035367	REMOTE CONTROL	1

Cable

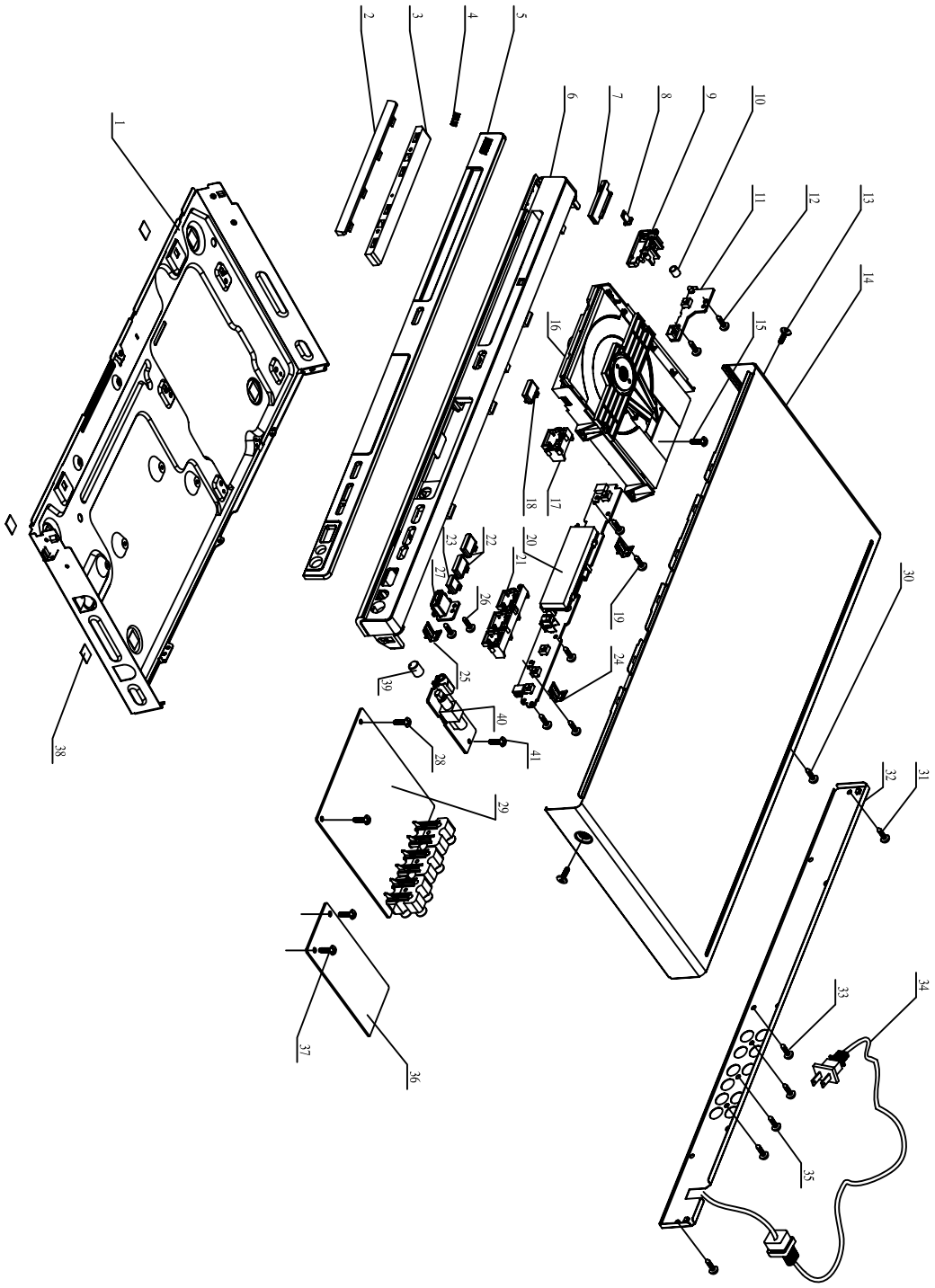
CON201	996510001527	CABLE 4PIN HS	1
CON302	996510000547	4P HS	1
CN7/3	996510001526	CABLE 5P HS	1
CN2	996510001528	CABLE 24P HS	1
MAINCN4	996510001222	HS 6P PH-6Y/PH-6Y	1
CN202	996510001529	CABLE 7PIN TJC3-7P/SCW-7P	1
LOADER	996510001192	PH-5Y/PH-5Y L=130MM	1
CON301	996510001530	CABLE 10P HS	1

SCREW LIST

No	12NC No.	Part Name	Q'ty
12	/	S/T Screw B 2.6 X 8 BF	2
13	/	M/C Screw Triangle W 3 X 6	2
15	/	Machine Screw	1
19	/	S/T Screw B 2.6 X 8 BF	5
26	/	Triangle M/C Screw B 3 X 6	2
28	/	Triangle M/C Screw B 3 X 6	2
30	/	Triangle M/C Screw B 3 X 6	1
31	/	Triangle M/C Screw B 3 X 6	2
33	/	Triangle M/C Screw B 3 X 6	1
35	/	S/T Screw B 3 X 8 BF	3
37	/	Triangle M/C Screw B 3 X 6	2
41	/	Triangle M/C Screw B 3 X 6	1
42	/	S/T Screw B 3 X 8 BF	2

Note:Only the parts mentioned in this list are normal service spare parts

DVP5168K/XX Mechanical Exploded View



Remark:
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Ass'y2 is the assembled compoient for location 4,5,6,7,8,9,17,18,21,22,23

It's a general Mechanical Exploded View for DVP5168K/XX, Detailed information please refer to Model set.

ENCASING & ACCESSORIES PARTS LIST

No	12NC No.	Part Name	Q'ty
1	/	Bottom Cabinet	1
Ass'y1	/	Front Door Ass'y	1
Ass'y2	/	Front Panel Ass'y	1
10	/	LED Supporter	1
11	/	Ass'y-Switch Board	1
14	/	Top cover	1
16	/	Loader	1
20	/	Ass'y- Front Board	1
24	/	ESD Washer	1
25	/	Earthing Plate	1
27	/	Ass'y - USB Board	1
29	/	Ass'y-Main Board	1
32	/	Rear Cabinet	1
34	/	Power Cord	1
36	/	Ass'y-Power Board	1
38	/	PAD	4
39	/	Knob	1
40	/	Ass'y-OK Board	1

SCREW LIST

No	12NC No.	Part Name	Q'ty
12	/	S/T Screw B 2.6 X 8 BF	2
13	/	M/C Screw Triangle W 3 X 6	2
15	/	Machine Screw	1
19	/	S/T Screw B 2.6 X 8 BF	5
26	/	Triangle M/C Screw B 3 X 6	2
28	/	Triangle M/C Screw B 3 X 6	2
30	/	Triangle M/C Screw B 3 X 6	1
31	/	Triangle M/C Screw B 3 X 6	2
33	/	Triangle M/C Screw B 3 X 6	1
35	/	S/T Screw B 3 X 8 BF	3
37	/	Triangle M/C Screw B 3 X 6	2
41	/	Triangle M/C Screw B 3 X 6	1

Accessory

AVCAB	996510001106	VIDEO CABLE 1500mm	1
RC	996500035367	REMOTE CONTROL	1

Note:Only the parts mentioned in this list are normal service spare parts

REVISION LIST

Version 1.0

* Initial release

Remark: This Service manual only for Philips Service repairment, Please Don't transmitte or forward it to others.